

すきプリ 中学数学

文字式 代入と式の値

もくじ

代入と式の値【正の数】

代入と式の値【負の数】

代入と式の値【2数の代入】

問題

代入して式の値を求めましょう。

$x = \frac{3}{4}$ のとき、次の式の値を求めましょう。

①

$$14x - 8$$

②

$$-9 - 12x$$

③

$$-12x^2 - \frac{1}{4}$$

④

$$4 - 4x$$

⑤

$$4 - 7x$$

⑥

$$-8 + 14x^2$$

1

$$\begin{aligned}
 14x - 8 &= 14 \times \frac{3}{4} - 8 \\
 &= \frac{21}{2} - 8 \\
 &= \frac{5}{2}
 \end{aligned}$$

2

$$\begin{aligned}
 -9 - 12x &= -9 - 12 \times \frac{3}{4} \\
 &= -9 - 9 \\
 &= -18
 \end{aligned}$$

3

$$\begin{aligned}
 -12x^2 - \frac{1}{4} &= -12 \times \left(\frac{3}{4}\right)^2 - \frac{1}{4} \\
 &= -12 \times \frac{9}{16} - \frac{1}{4} \\
 &= -\frac{27}{4} - \frac{1}{4} \\
 &= -7
 \end{aligned}$$

4

$$\begin{aligned}
 4 - 4x &= 4 - 4 \times \frac{3}{4} \\
 &= 4 - 3 \\
 &= 1
 \end{aligned}$$

5

$$\begin{aligned}
 4 - 7x &= 4 - 7 \times \frac{3}{4} \\
 &= 4 - \frac{21}{4} \\
 &= -\frac{5}{4}
 \end{aligned}$$

6

$$\begin{aligned}
 -8 + 14x^2 &= -8 + 14 \times \left(\frac{3}{4}\right)^2 \\
 &= -8 + 14 \times \frac{9}{16} \\
 &= -8 + \frac{63}{8} \\
 &= -\frac{1}{8}
 \end{aligned}$$

$x = \frac{3}{2}$ のとき、次の式の値を求めましょう。

①

$$-\frac{1}{4} + \frac{x^2}{2}$$

②

$$-9 + 8x$$

③

$$\frac{x^2}{2} - 2$$

④

$$-\frac{2x}{3} - \frac{3}{2}$$

⑤

$$-\frac{3}{2} + \frac{x}{2}$$

⑥

$$-10x + 6$$

1

$$\begin{aligned}
 -\frac{1}{4} + \frac{x^2}{2} &= -\frac{1}{4} + \frac{1}{2} \times \left(\frac{3}{2}\right)^2 \\
 &= -\frac{1}{4} + \frac{1}{2} \times \frac{9}{4} \\
 &= -\frac{1}{4} + \frac{9}{8} \\
 &= \frac{7}{8}
 \end{aligned}$$

2

$$\begin{aligned}
 -9 + 8x &= -9 + 8 \times \frac{3}{2} \\
 &= -9 + 12 \\
 &= 3
 \end{aligned}$$

3

$$\begin{aligned}
 \frac{x^2}{2} - 2 &= \frac{1}{2} \times \left(\frac{3}{2}\right)^2 - 2 \\
 &= \frac{1}{2} \times \frac{9}{4} - 2 \\
 &= \frac{9}{8} - 2 \\
 &= -\frac{7}{8}
 \end{aligned}$$

4

$$\begin{aligned}
 -\frac{2x}{3} - \frac{3}{2} &= -\frac{2}{3} \times \frac{3}{2} - \frac{3}{2} \\
 &= -1 - \frac{3}{2} \\
 &= -\frac{5}{2}
 \end{aligned}$$

5

$$\begin{aligned}
 -\frac{3}{2} + \frac{x}{2} &= -\frac{3}{2} + \frac{1}{2} \times \frac{3}{2} \\
 &= -\frac{3}{2} + \frac{3}{4} \\
 &= -\frac{3}{4}
 \end{aligned}$$

6

$$\begin{aligned}
 -10x + 6 &= -10 \times \frac{3}{2} + 6 \\
 &= -15 + 6 \\
 &= -9
 \end{aligned}$$

$x = 12$ のとき、次の式の値を求めましょう。

①

$$\frac{2x}{3} - 4$$

②

$$11 + \frac{x}{2}$$

③

$$-13 + 3x$$

④

$$3 - \frac{x}{3}$$

⑤

$$\frac{3x}{4}$$

⑥

$$10 - \frac{x}{3}$$

1

$$\begin{aligned}\frac{2x}{3} - 4 &= \frac{2}{3} \times 12 - 4 \\ &= 8 - 4 \\ &= 4\end{aligned}$$

2

$$\begin{aligned}11 + \frac{x}{2} &= 11 + \frac{1}{2} \times 12 \\ &= 11 + 6 \\ &= 17\end{aligned}$$

3

$$\begin{aligned}-13 + 3x &= -13 + 3 \times 12 \\ &= -13 + 36 \\ &= 23\end{aligned}$$

4

$$\begin{aligned}3 - \frac{x}{3} &= 3 - \frac{1}{3} \times 12 \\ &= 3 - 4 \\ &= -1\end{aligned}$$

5

$$\begin{aligned}\frac{3x}{4} &= \frac{3}{4} \times 12 \\ &= 9\end{aligned}$$

6

$$\begin{aligned}10 - \frac{x}{3} &= 10 - \frac{1}{3} \times 12 \\ &= 10 - 4 \\ &= 6\end{aligned}$$

$x = \frac{3}{2}$ のとき、次の式の値を求めましょう。

①

$$8 + \frac{2x}{3}$$

②

$$2x + \frac{2}{3}$$

③

$$-\frac{2x}{3} - 11$$

④

$$\frac{1}{2} - 3x$$

⑤

$$-2 + \frac{x^2}{2}$$

⑥

$$-13x + 15$$

1

$$\begin{aligned}8 + \frac{2x}{3} &= 8 + \frac{2}{3} \times \frac{3}{2} \\ &= 8 + 1 \\ &= 9\end{aligned}$$

2

$$\begin{aligned}2x + \frac{2}{3} &= 2 \times \frac{3}{2} + \frac{2}{3} \\ &= 3 + \frac{2}{3} \\ &= \frac{11}{3}\end{aligned}$$

3

$$\begin{aligned}-\frac{2x}{3} - 11 &= -\frac{2}{3} \times \frac{3}{2} - 11 \\ &= -1 - 11 \\ &= -12\end{aligned}$$

4

$$\begin{aligned}\frac{1}{2} - 3x &= \frac{1}{2} - 3 \times \frac{3}{2} \\ &= \frac{1}{2} - \frac{9}{2} \\ &= -4\end{aligned}$$

5

$$\begin{aligned}-2 + \frac{x^2}{2} &= -2 + \frac{1}{2} \times \left(\frac{3}{2}\right)^2 \\ &= -2 + \frac{1}{2} \times \frac{9}{4} \\ &= -2 + \frac{9}{8} \\ &= -\frac{7}{8}\end{aligned}$$

6

$$\begin{aligned}-13x + 15 &= -13 \times \frac{3}{2} + 15 \\ &= -\frac{39}{2} + 15 \\ &= -\frac{9}{2}\end{aligned}$$

$x = 3$ のとき、次の式の値を求めましょう。

①

$$8x - 3$$

②

$$\frac{2x^2}{3} - \frac{1}{2}$$

③

$$-13 + \frac{2x}{3}$$

④

$$-\frac{3}{2} - \frac{3x}{2}$$

⑤

$$-\frac{3x}{4} + \frac{1}{4}$$

⑥

$$2 + 5x$$

1

$$\begin{aligned}8x - 3 &= 8 \times 3 - 3 \\ &= 24 - 3 \\ &= 21\end{aligned}$$

2

$$\begin{aligned}\frac{2x^2}{3} - \frac{1}{2} &= \frac{2}{3} \times 3^2 - \frac{1}{2} \\ &= \frac{2}{3} \times 9 - \frac{1}{2} \\ &= 6 - \frac{1}{2} \\ &= \frac{11}{2}\end{aligned}$$

3

$$\begin{aligned}-13 + \frac{2x}{3} &= -13 + \frac{2}{3} \times 3 \\ &= -13 + 2 \\ &= -11\end{aligned}$$

4

$$\begin{aligned}-\frac{3}{2} - \frac{3x}{2} &= -\frac{3}{2} - \frac{3}{2} \times 3 \\ &= -\frac{3}{2} - \frac{9}{2} \\ &= -6\end{aligned}$$

5

$$\begin{aligned}-\frac{3x}{4} + \frac{1}{4} &= -\frac{3}{4} \times 3 + \frac{1}{4} \\ &= -\frac{9}{4} + \frac{1}{4} \\ &= -2\end{aligned}$$

6

$$\begin{aligned}2 + 5x &= 2 + 5 \times 3 \\ &= 2 + 15 \\ &= 17\end{aligned}$$

$x = 14$ のとき、次の式の値を求めましょう。

①

$$-6 + \frac{3x}{2}$$

②

$$5 - 2x$$

③

$$\frac{x}{4} - 8$$

④

$$\frac{3x}{4} - 13$$

⑤

$$\frac{1}{3} + \frac{x}{3}$$

⑥

$$6 - \frac{x}{3}$$

1

$$\begin{aligned} -6 + \frac{3x}{2} &= -6 + \frac{3}{2} \times 14 \\ &= -6 + 21 \\ &= 15 \end{aligned}$$

2

$$\begin{aligned} 5 - 2x &= 5 - 2 \times 14 \\ &= 5 - 28 \\ &= -23 \end{aligned}$$

3

$$\begin{aligned} \frac{x}{4} - 8 &= \frac{1}{4} \times 14 - 8 \\ &= \frac{7}{2} - 8 \\ &= -\frac{9}{2} \end{aligned}$$

4

$$\begin{aligned} \frac{3x}{4} - 13 &= \frac{3}{4} \times 14 - 13 \\ &= \frac{21}{2} - 13 \\ &= -\frac{5}{2} \end{aligned}$$

5

$$\begin{aligned} \frac{1}{3} + \frac{x}{3} &= \frac{1}{3} + \frac{1}{3} \times 14 \\ &= \frac{1}{3} + \frac{14}{3} \\ &= 5 \end{aligned}$$

6

$$\begin{aligned} 6 - \frac{x}{3} &= 6 - \frac{1}{3} \times 14 \\ &= 6 - \frac{14}{3} \\ &= \frac{4}{3} \end{aligned}$$

$x = 5$ のとき、次の式の値を求めましょう。

①

$$-\frac{x^2}{3} + 12$$

②

$$-\frac{3x}{4} + 6$$

③

$$-5 + \frac{x}{3}$$

④

$$6 - 5x$$

⑤

$$7 - \frac{x^2}{2}$$

⑥

$$-\frac{x^2}{2} + 13$$

1

$$\begin{aligned}-\frac{x^2}{3} + 12 &= -\frac{1}{3} \times 5^2 + 12 \\ &= -\frac{1}{3} \times 25 + 12 \\ &= -\frac{25}{3} + 12 \\ &= \frac{11}{3}\end{aligned}$$

2

$$\begin{aligned}-\frac{3x}{4} + 6 &= -\frac{3}{4} \times 5 + 6 \\ &= -\frac{15}{4} + 6 \\ &= \frac{9}{4}\end{aligned}$$

3

$$\begin{aligned}-5 + \frac{x}{3} &= -5 + \frac{1}{3} \times 5 \\ &= -5 + \frac{5}{3} \\ &= -\frac{10}{3}\end{aligned}$$

4

$$\begin{aligned}6 - 5x &= 6 - 5 \times 5 \\ &= 6 - 25 \\ &= -19\end{aligned}$$

5

$$\begin{aligned}7 - \frac{x^2}{2} &= 7 - \frac{1}{2} \times 5^2 \\ &= 7 - \frac{1}{2} \times 25 \\ &= 7 - \frac{25}{2} \\ &= -\frac{11}{2}\end{aligned}$$

6

$$\begin{aligned}-\frac{x^2}{2} + 13 &= -\frac{1}{2} \times 5^2 + 13 \\ &= -\frac{1}{2} \times 25 + 13 \\ &= -\frac{25}{2} + 13 \\ &= \frac{1}{2}\end{aligned}$$

$x = 6$ のとき、次の式の値を求めましょう。

①

$$\frac{x^2}{3} - 4$$

②

$$\frac{3x}{2} - 2$$

③

$$-10 + \frac{2x}{3}$$

④

$$2 - \frac{3x}{4}$$

⑤

$$8 - 4x$$

⑥

$$-\frac{x^2}{3} + 14$$

1

$$\begin{aligned}\frac{x^2}{3} - 4 &= \frac{1}{3} \times 6^2 - 4 \\ &= \frac{1}{3} \times 36 - 4 \\ &= 12 - 4 \\ &= 8\end{aligned}$$

2

$$\begin{aligned}\frac{3x}{2} - 2 &= \frac{3}{2} \times 6 - 2 \\ &= 9 - 2 \\ &= 7\end{aligned}$$

3

$$\begin{aligned}-10 + \frac{2x}{3} &= -10 + \frac{2}{3} \times 6 \\ &= -10 + 4 \\ &= -6\end{aligned}$$

4

$$\begin{aligned}2 - \frac{3x}{4} &= 2 - \frac{3}{4} \times 6 \\ &= 2 - \frac{9}{2} \\ &= -\frac{5}{2}\end{aligned}$$

5

$$\begin{aligned}8 - 4x &= 8 - 4 \times 6 \\ &= 8 - 24 \\ &= -16\end{aligned}$$

6

$$\begin{aligned}-\frac{x^2}{3} + 14 &= -\frac{1}{3} \times 6^2 + 14 \\ &= -\frac{1}{3} \times 36 + 14 \\ &= -12 + 14 \\ &= 2\end{aligned}$$

$x = \frac{1}{2}$ のとき、次の式の値を求めましょう。

①

$$\frac{1}{3} + \frac{x^2}{3}$$

②

$$-\frac{x}{3} + 2$$

③

$$7x - 6$$

④

$$-14x + 3$$

⑤

$$14 - 12x$$

⑥

$$4x^2 - 5$$

1

$$\begin{aligned}\frac{1}{3} + \frac{x^2}{3} &= \frac{1}{3} + \frac{1}{3} \times \left(\frac{1}{2}\right)^2 \\ &= \frac{1}{3} + \frac{1}{3} \times \frac{1}{4} \\ &= \frac{1}{3} + \frac{1}{12} \\ &= \frac{5}{12}\end{aligned}$$

2

$$\begin{aligned}-\frac{x}{3} + 2 &= -\frac{1}{3} \times \frac{1}{2} + 2 \\ &= -\frac{1}{6} + 2 \\ &= \frac{11}{6}\end{aligned}$$

3

$$\begin{aligned}7x - 6 &= 7 \times \frac{1}{2} - 6 \\ &= \frac{7}{2} - 6 \\ &= -\frac{5}{2}\end{aligned}$$

4

$$\begin{aligned}-14x + 3 &= -14 \times \frac{1}{2} + 3 \\ &= -7 + 3 \\ &= -4\end{aligned}$$

5

$$\begin{aligned}14 - 12x &= 14 - 12 \times \frac{1}{2} \\ &= 14 - 6 \\ &= 8\end{aligned}$$

6

$$\begin{aligned}4x^2 - 5 &= 4 \times \left(\frac{1}{2}\right)^2 - 5 \\ &= 4 \times \frac{1}{4} - 5 \\ &= 1 - 5 \\ &= -4\end{aligned}$$

$x = 7$ のとき、次の式の値を求めましょう。

①

$$5 - \frac{3x}{4}$$

②

$$\frac{3x}{2} - 5$$

③

$$2x + 15$$

④

$$\frac{2x}{3} - 8$$

⑤

$$2x + 14$$

⑥

$$-12 + 4x$$

1

$$\begin{aligned}5 - \frac{3x}{4} &= 5 - \frac{3}{4} \times 7 \\ &= 5 - \frac{21}{4} \\ &= -\frac{1}{4}\end{aligned}$$

2

$$\begin{aligned}\frac{3x}{2} - 5 &= \frac{3}{2} \times 7 - 5 \\ &= \frac{21}{2} - 5 \\ &= \frac{11}{2}\end{aligned}$$

3

$$\begin{aligned}2x + 15 &= 2 \times 7 + 15 \\ &= 14 + 15 \\ &= 29\end{aligned}$$

4

$$\begin{aligned}\frac{2x}{3} - 8 &= \frac{2}{3} \times 7 - 8 \\ &= \frac{14}{3} - 8 \\ &= -\frac{10}{3}\end{aligned}$$

5

$$\begin{aligned}2x + 14 &= 2 \times 7 + 14 \\ &= 14 + 14 \\ &= 28\end{aligned}$$

6

$$\begin{aligned}-12 + 4x &= -12 + 4 \times 7 \\ &= -12 + 28 \\ &= 16\end{aligned}$$

$x = \frac{3}{2}$ のとき、次の式の値を求めましょう。

①

$$-11x + 12$$

②

$$-\frac{2}{3} - \frac{x}{3}$$

③

$$-8x - 13$$

④

$$-\frac{1}{2} + \frac{2x}{3}$$

⑤

$$\frac{x}{3} - 6$$

⑥

$$-12x - 4$$

1

$$\begin{aligned} -11x + 12 &= -11 \times \frac{3}{2} + 12 \\ &= -\frac{33}{2} + 12 \\ &= -\frac{9}{2} \end{aligned}$$

2

$$\begin{aligned} -\frac{2}{3} - \frac{x}{3} &= -\frac{2}{3} - \frac{1}{3} \times \frac{3}{2} \\ &= -\frac{2}{3} - \frac{1}{2} \\ &= -\frac{7}{6} \end{aligned}$$

3

$$\begin{aligned} -8x - 13 &= -8 \times \frac{3}{2} - 13 \\ &= -12 - 13 \\ &= -25 \end{aligned}$$

4

$$\begin{aligned} -\frac{1}{2} + \frac{2x}{3} &= -\frac{1}{2} + \frac{2}{3} \times \frac{3}{2} \\ &= -\frac{1}{2} + 1 \\ &= \frac{1}{2} \end{aligned}$$

5

$$\begin{aligned} \frac{x}{3} - 6 &= \frac{1}{3} \times \frac{3}{2} - 6 \\ &= \frac{1}{2} - 6 \\ &= -\frac{11}{2} \end{aligned}$$

6

$$\begin{aligned} -12x - 4 &= -12 \times \frac{3}{2} - 4 \\ &= -18 - 4 \\ &= -22 \end{aligned}$$

$x = 6$ のとき、次の式の値を求めましょう。

①

$$\frac{x^2}{4} - 15$$

②

$$-2 - \frac{x}{3}$$

③

$$\frac{3x}{2} + 9$$

④

$$\frac{x}{4} + 2$$

⑤

$$\frac{3x}{4} - 6$$

⑥

$$\frac{x}{4} - 3$$

1

$$\begin{aligned}\frac{x^2}{4} - 15 &= \frac{1}{4} \times 6^2 - 15 \\ &= \frac{1}{4} \times 36 - 15 \\ &= 9 - 15 \\ &= -6\end{aligned}$$

2

$$\begin{aligned}-2 - \frac{x}{3} &= -2 - \frac{1}{3} \times 6 \\ &= -2 - 2 \\ &= -4\end{aligned}$$

3

$$\begin{aligned}\frac{3x}{2} + 9 &= \frac{3}{2} \times 6 + 9 \\ &= 9 + 9 \\ &= 18\end{aligned}$$

4

$$\begin{aligned}\frac{x}{4} + 2 &= \frac{1}{4} \times 6 + 2 \\ &= \frac{3}{2} + 2 \\ &= \frac{7}{2}\end{aligned}$$

5

$$\begin{aligned}\frac{3x}{4} - 6 &= \frac{3}{4} \times 6 - 6 \\ &= \frac{9}{2} - 6 \\ &= -\frac{3}{2}\end{aligned}$$

6

$$\begin{aligned}\frac{x}{4} - 3 &= \frac{1}{4} \times 6 - 3 \\ &= \frac{3}{2} - 3 \\ &= -\frac{3}{2}\end{aligned}$$

$x = \frac{1}{2}$ のとき、次の式の値を求めましょう。

①

$$-8x^2 - 11$$

②

$$\frac{3}{4} + \frac{x^2}{3}$$

③

$$3x - 4$$

④

$$-15x^2 + 2$$

⑤

$$-8x^2 - \frac{3}{2}$$

⑥

$$10 - 6x$$

1

$$\begin{aligned}
 -8x^2 - 11 &= -8 \times \left(\frac{1}{2}\right)^2 - 11 \\
 &= -8 \times \frac{1}{4} - 11 \\
 &= -2 - 11 \\
 &= -13
 \end{aligned}$$

2

$$\begin{aligned}
 \frac{3}{4} + \frac{x^2}{3} &= \frac{3}{4} + \frac{1}{3} \times \left(\frac{1}{2}\right)^2 \\
 &= \frac{3}{4} + \frac{1}{3} \times \frac{1}{4} \\
 &= \frac{3}{4} + \frac{1}{12} \\
 &= \frac{5}{6}
 \end{aligned}$$

3

$$\begin{aligned}
 3x - 4 &= 3 \times \frac{1}{2} - 4 \\
 &= \frac{3}{2} - 4 \\
 &= -\frac{5}{2}
 \end{aligned}$$

4

$$\begin{aligned}
 -15x^2 + 2 &= -15 \times \left(\frac{1}{2}\right)^2 + 2 \\
 &= -15 \times \frac{1}{4} + 2 \\
 &= -\frac{15}{4} + 2 \\
 &= -\frac{7}{4}
 \end{aligned}$$

5

$$\begin{aligned}
 -8x^2 - \frac{3}{2} &= -8 \times \left(\frac{1}{2}\right)^2 - \frac{3}{2} \\
 &= -8 \times \frac{1}{4} - \frac{3}{2} \\
 &= -2 - \frac{3}{2} \\
 &= -\frac{7}{2}
 \end{aligned}$$

6

$$\begin{aligned}
 10 - 6x &= 10 - 6 \times \frac{1}{2} \\
 &= 10 - 3 \\
 &= 7
 \end{aligned}$$

$x = 8$ のとき、次の式の値を求めましょう。

①

$$-3x + 14$$

②

$$-11 + \frac{3x}{4}$$

③

$$-11 - \frac{3x}{2}$$

④

$$\frac{3x}{2} + 10$$

⑤

$$-\frac{x}{4}$$

⑥

$$2x - 13$$

1

$$\begin{aligned} -3x + 14 &= -3 \times 8 + 14 \\ &= -24 + 14 \\ &= -10 \end{aligned}$$

2

$$\begin{aligned} -11 + \frac{3x}{4} &= -11 + \frac{3}{4} \times 8 \\ &= -11 + 6 \\ &= -5 \end{aligned}$$

3

$$\begin{aligned} -11 - \frac{3x}{2} &= -11 - \frac{3}{2} \times 8 \\ &= -11 - 12 \\ &= -23 \end{aligned}$$

4

$$\begin{aligned} \frac{3x}{2} + 10 &= \frac{3}{2} \times 8 + 10 \\ &= 12 + 10 \\ &= 22 \end{aligned}$$

5

$$\begin{aligned} -\frac{x}{4} &= -\frac{1}{4} \times 8 \\ &= -2 \end{aligned}$$

6

$$\begin{aligned} 2x - 13 &= 2 \times 8 - 13 \\ &= 16 - 13 \\ &= 3 \end{aligned}$$

$x = 9$ のとき、次の式の値を求めましょう。

①

$$\frac{4}{x}$$

②

$$-2 - 2x$$

③

$$-\frac{x^2}{3} + 15$$

④

$$-12 + 2x$$

⑤

$$\frac{x^2}{3} - 7$$

⑥

$$-\frac{x}{3} + 12$$

1

$$\frac{4}{x} = \frac{4}{9}$$

2

$$\begin{aligned} -2 - 2x &= -2 - 2 \times 9 \\ &= -2 - 18 \\ &= -20 \end{aligned}$$

3

$$\begin{aligned} -\frac{x^2}{3} + 15 &= -\frac{1}{3} \times 9^2 + 15 \\ &= -\frac{1}{3} \times 81 + 15 \\ &= -27 + 15 \\ &= -12 \end{aligned}$$

4

$$\begin{aligned} -12 + 2x &= -12 + 2 \times 9 \\ &= -12 + 18 \\ &= 6 \end{aligned}$$

5

$$\begin{aligned} \frac{x^2}{3} - 7 &= \frac{1}{3} \times 9^2 - 7 \\ &= \frac{1}{3} \times 81 - 7 \\ &= 27 - 7 \\ &= 20 \end{aligned}$$

6

$$\begin{aligned} -\frac{x}{3} + 12 &= -\frac{1}{3} \times 9 + 12 \\ &= -3 + 12 \\ &= 9 \end{aligned}$$

$x = \frac{3}{4}$ のとき、次の式の値を求めましょう。

①

$$-\frac{1}{3} - 2x$$

②

$$8x + 10$$

③

$$8x^2 - \frac{3}{2}$$

④

$$\frac{3}{4} + 11x$$

⑤

$$10x^2 - 5$$

⑥

$$-4x + 13$$

1

$$\begin{aligned} -\frac{1}{3} - 2x &= -\frac{1}{3} - 2 \times \frac{3}{4} \\ &= -\frac{1}{3} - \frac{3}{2} \\ &= -\frac{11}{6} \end{aligned}$$

2

$$\begin{aligned} 8x + 10 &= 8 \times \frac{3}{4} + 10 \\ &= 6 + 10 \\ &= 16 \end{aligned}$$

3

$$\begin{aligned} 8x^2 - \frac{3}{2} &= 8 \times \left(\frac{3}{4}\right)^2 - \frac{3}{2} \\ &= 8 \times \frac{9}{16} - \frac{3}{2} \\ &= \frac{9}{2} - \frac{3}{2} \\ &= 3 \end{aligned}$$

4

$$\begin{aligned} \frac{3}{4} + 11x &= \frac{3}{4} + 11 \times \frac{3}{4} \\ &= \frac{3}{4} + \frac{33}{4} \\ &= 9 \end{aligned}$$

5

$$\begin{aligned} 10x^2 - 5 &= 10 \times \left(\frac{3}{4}\right)^2 - 5 \\ &= 10 \times \frac{9}{16} - 5 \\ &= \frac{45}{8} - 5 \\ &= \frac{5}{8} \end{aligned}$$

6

$$\begin{aligned} -4x + 13 &= -4 \times \frac{3}{4} + 13 \\ &= -3 + 13 \\ &= 10 \end{aligned}$$

$x = 2$ のとき、次の式の値を求めましょう。

①

$$-4x + 8$$

②

$$13x + 2$$

③

$$-\frac{1}{4} + \frac{3x^2}{4}$$

④

$$\frac{5}{x^2}$$

⑤

$$-10x + 5$$

⑥

$$-6x - 4$$

1

$$\begin{aligned} -4x + 8 &= -4 \times 2 + 8 \\ &= -8 + 8 \\ &= 0 \end{aligned}$$

2

$$\begin{aligned} 13x + 2 &= 13 \times 2 + 2 \\ &= 26 + 2 \\ &= 28 \end{aligned}$$

3

$$\begin{aligned} -\frac{1}{4} + \frac{3x^2}{4} &= -\frac{1}{4} + \frac{3}{4} \times 2^2 \\ &= -\frac{1}{4} + \frac{3}{4} \times 4 \\ &= -\frac{1}{4} + 3 \\ &= \frac{11}{4} \end{aligned}$$

4

$$\begin{aligned} \frac{5}{x^2} &= \frac{5}{2^2} \\ &= \frac{5}{4} \end{aligned}$$

5

$$\begin{aligned} -10x + 5 &= -10 \times 2 + 5 \\ &= -20 + 5 \\ &= -15 \end{aligned}$$

6

$$\begin{aligned} -6x - 4 &= -6 \times 2 - 4 \\ &= -12 - 4 \\ &= -16 \end{aligned}$$

$x = \frac{1}{3}$ のとき、次の式の値を求めましょう。

①

$$3 - 9x^2$$

②

$$-5x - \frac{2}{3}$$

③

$$-4x + \frac{1}{4}$$

④

$$-3x^2 - \frac{3}{2}$$

⑤

$$2x^2 + \frac{1}{3}$$

⑥

$$12x^2 + \frac{1}{2}$$

1

$$\begin{aligned}
 3 - 9x^2 &= 3 - 9 \times \left(\frac{1}{3}\right)^2 \\
 &= 3 - 9 \times \frac{1}{9} \\
 &= 3 - 1 \\
 &= 2
 \end{aligned}$$

2

$$\begin{aligned}
 -5x - \frac{2}{3} &= -5 \times \frac{1}{3} - \frac{2}{3} \\
 &= -\frac{5}{3} - \frac{2}{3} \\
 &= -\frac{7}{3}
 \end{aligned}$$

3

$$\begin{aligned}
 -4x + \frac{1}{4} &= -4 \times \frac{1}{3} + \frac{1}{4} \\
 &= -\frac{4}{3} + \frac{1}{4} \\
 &= -\frac{13}{12}
 \end{aligned}$$

4

$$\begin{aligned}
 -3x^2 - \frac{3}{2} &= -3 \times \left(\frac{1}{3}\right)^2 - \frac{3}{2} \\
 &= -3 \times \frac{1}{9} - \frac{3}{2} \\
 &= -\frac{1}{3} - \frac{3}{2} \\
 &= -\frac{11}{6}
 \end{aligned}$$

5

$$\begin{aligned}
 2x^2 + \frac{1}{3} &= 2 \times \left(\frac{1}{3}\right)^2 + \frac{1}{3} \\
 &= 2 \times \frac{1}{9} + \frac{1}{3} \\
 &= \frac{2}{9} + \frac{1}{3} \\
 &= \frac{5}{9}
 \end{aligned}$$

6

$$\begin{aligned}
 12x^2 + \frac{1}{2} &= 12 \times \left(\frac{1}{3}\right)^2 + \frac{1}{2} \\
 &= 12 \times \frac{1}{9} + \frac{1}{2} \\
 &= \frac{4}{3} + \frac{1}{2} \\
 &= \frac{11}{6}
 \end{aligned}$$

$x = \frac{1}{2}$ のとき、次の式の値を求めましょう。

①

$$-2 - \frac{2x}{3}$$

②

$$-\frac{1}{2} - 8x^2$$

③

$$-8x^2 - 9$$

④

$$-4x + 11$$

⑤

$$8 - 6x^2$$

⑥

$$-2x - 6$$

1

$$\begin{aligned}
 -2 - \frac{2x}{3} &= -2 - \frac{2}{3} \times \frac{1}{2} \\
 &= -2 - \frac{1}{3} \\
 &= -\frac{7}{3}
 \end{aligned}$$

2

$$\begin{aligned}
 -\frac{1}{2} - 8x^2 &= -\frac{1}{2} - 8 \times \left(\frac{1}{2}\right)^2 \\
 &= -\frac{1}{2} - 8 \times \frac{1}{4} \\
 &= -\frac{1}{2} - 2 \\
 &= -\frac{5}{2}
 \end{aligned}$$

3

$$\begin{aligned}
 -8x^2 - 9 &= -8 \times \left(\frac{1}{2}\right)^2 - 9 \\
 &= -8 \times \frac{1}{4} - 9 \\
 &= -2 - 9 \\
 &= -11
 \end{aligned}$$

4

$$\begin{aligned}
 -4x + 11 &= -4 \times \frac{1}{2} + 11 \\
 &= -2 + 11 \\
 &= 9
 \end{aligned}$$

5

$$\begin{aligned}
 8 - 6x^2 &= 8 - 6 \times \left(\frac{1}{2}\right)^2 \\
 &= 8 - 6 \times \frac{1}{4} \\
 &= 8 - \frac{3}{2} \\
 &= \frac{13}{2}
 \end{aligned}$$

6

$$\begin{aligned}
 -2x - 6 &= -2 \times \frac{1}{2} - 6 \\
 &= -1 - 6 \\
 &= -7
 \end{aligned}$$

$x = 12$ のとき、次の式の値を求めましょう。

①

$$-\frac{3x}{4} - 8$$

②

$$-\frac{3x}{2} + 7$$

③

$$\frac{3x}{4} + 9$$

④

$$8 + \frac{2x}{3}$$

⑤

$$\frac{x}{6}$$

⑥

$$-2x + 2$$

1

$$\begin{aligned}-\frac{3x}{4} - 8 &= -\frac{3}{4} \times 12 - 8 \\ &= -9 - 8 \\ &= -17\end{aligned}$$

2

$$\begin{aligned}-\frac{3x}{2} + 7 &= -\frac{3}{2} \times 12 + 7 \\ &= -18 + 7 \\ &= -11\end{aligned}$$

3

$$\begin{aligned}\frac{3x}{4} + 9 &= \frac{3}{4} \times 12 + 9 \\ &= 9 + 9 \\ &= 18\end{aligned}$$

4

$$\begin{aligned}8 + \frac{2x}{3} &= 8 + \frac{2}{3} \times 12 \\ &= 8 + 8 \\ &= 16\end{aligned}$$

5

$$\begin{aligned}\frac{x}{6} &= \frac{12}{6} \\ &= 2\end{aligned}$$

6

$$\begin{aligned}-2x + 2 &= -2 \times 12 + 2 \\ &= -24 + 2 \\ &= -22\end{aligned}$$

問題

符号に注意して代入し、式の値を求めましょう。

$x = -\frac{2}{3}$ のとき、次の式の値を求めましょう。

①

$$\frac{3}{4} + 3x$$

②

$$-\frac{3x^2}{4} + 2$$

③

$$\frac{3x}{4} - \frac{1}{2}$$

④

$$-10x - 3$$

⑤

$$11 + 10x$$

⑥

$$-3 + 4x^2$$

1

$$\begin{aligned}\frac{3}{4} + 3x &= \frac{3}{4} + 3 \times \left(-\frac{2}{3}\right) \\ &= \frac{3}{4} - 2 \\ &= -\frac{5}{4}\end{aligned}$$

2

$$\begin{aligned}-\frac{3x^2}{4} + 2 &= -\frac{3}{4} \times \left(-\frac{2}{3}\right)^2 + 2 \\ &= -\frac{3}{4} \times \frac{4}{9} + 2 \\ &= -\frac{1}{3} + 2 \\ &= \frac{5}{3}\end{aligned}$$

3

$$\begin{aligned}\frac{3x}{4} - \frac{1}{2} &= \frac{3}{4} \times \left(-\frac{2}{3}\right) - \frac{1}{2} \\ &= -\frac{1}{2} - \frac{1}{2} \\ &= -1\end{aligned}$$

4

$$\begin{aligned}-10x - 3 &= -10 \times \left(-\frac{2}{3}\right) - 3 \\ &= \frac{20}{3} - 3 \\ &= \frac{11}{3}\end{aligned}$$

5

$$\begin{aligned}11 + 10x &= 11 + 10 \times \left(-\frac{2}{3}\right) \\ &= 11 - \frac{20}{3} \\ &= \frac{13}{3}\end{aligned}$$

6

$$\begin{aligned}-3 + 4x^2 &= -3 + 4 \times \left(-\frac{2}{3}\right)^2 \\ &= -3 + 4 \times \frac{4}{9} \\ &= -3 + \frac{16}{9} \\ &= -\frac{11}{9}\end{aligned}$$

$x = -5$ のとき、次の式の値を求めましょう。

①

$$-2x + 14$$

②

$$\frac{15}{x^2}$$

③

$$-4x - 4$$

④

$$-13 + 3x$$

⑤

$$5x + 9$$

⑥

$$2x + 4$$

1

$$\begin{aligned} -2x + 14 &= -2 \times (-5) + 14 \\ &= 10 + 14 \\ &= 24 \end{aligned}$$

2

$$\begin{aligned} \frac{15}{x^2} &= \frac{15}{(-5)^2} \\ &= \frac{15}{25} \\ &= \frac{3}{5} \end{aligned}$$

3

$$\begin{aligned} -4x - 4 &= -4 \times (-5) - 4 \\ &= 20 - 4 \\ &= 16 \end{aligned}$$

4

$$\begin{aligned} -13 + 3x &= -13 + 3 \times (-5) \\ &= -13 - 15 \\ &= -28 \end{aligned}$$

5

$$\begin{aligned} 5x + 9 &= 5 \times (-5) + 9 \\ &= -25 + 9 \\ &= -16 \end{aligned}$$

6

$$\begin{aligned} 2x + 4 &= 2 \times (-5) + 4 \\ &= -10 + 4 \\ &= -6 \end{aligned}$$

$x = -\frac{1}{2}$ のとき、次の式の値を求めましょう。

①

$$-5x^2 + 2$$

②

$$\frac{3}{2} - \frac{x}{4}$$

③

$$13x^2 - 5$$

④

$$10 + 14x$$

⑤

$$-3x - 7$$

⑥

$$-\frac{1}{4} - 15x^2$$

1

$$\begin{aligned}
 -5x^2 + 2 &= -5 \times \left(-\frac{1}{2}\right)^2 + 2 \\
 &= -5 \times \frac{1}{4} + 2 \\
 &= -\frac{5}{4} + 2 \\
 &= \frac{3}{4}
 \end{aligned}$$

2

$$\begin{aligned}
 \frac{3}{2} - \frac{x}{4} &= \frac{3}{2} - \frac{1}{4} \times \left(-\frac{1}{2}\right) \\
 &= \frac{3}{2} + \frac{1}{8} \\
 &= \frac{13}{8}
 \end{aligned}$$

3

$$\begin{aligned}
 13x^2 - 5 &= 13 \times \left(-\frac{1}{2}\right)^2 - 5 \\
 &= 13 \times \frac{1}{4} - 5 \\
 &= \frac{13}{4} - 5 \\
 &= -\frac{7}{4}
 \end{aligned}$$

4

$$\begin{aligned}
 10 + 14x &= 10 + 14 \times \left(-\frac{1}{2}\right) \\
 &= 10 - 7 \\
 &= 3
 \end{aligned}$$

5

$$\begin{aligned}
 -3x - 7 &= -3 \times \left(-\frac{1}{2}\right) - 7 \\
 &= \frac{3}{2} - 7 \\
 &= -\frac{11}{2}
 \end{aligned}$$

6

$$\begin{aligned}
 -\frac{1}{4} - 15x^2 &= -\frac{1}{4} - 15 \times \left(-\frac{1}{2}\right)^2 \\
 &= -\frac{1}{4} - 15 \times \frac{1}{4} \\
 &= -\frac{1}{4} - \frac{15}{4} \\
 &= -4
 \end{aligned}$$

$x = -\frac{1}{3}$ のとき、次の式の値を求めましょう。

①

$$-15x + \frac{3}{2}$$

②

$$\frac{1}{4} - \frac{x}{4}$$

③

$$\frac{1}{3} - \frac{3x^2}{2}$$

④

$$3x^2 + 3$$

⑤

$$6 - 15x^2$$

⑥

$$2x - \frac{1}{2}$$

1

$$\begin{aligned} -15x + \frac{3}{2} &= -15 \times \left(-\frac{1}{3}\right) + \frac{3}{2} \\ &= 5 + \frac{3}{2} \\ &= \frac{13}{2} \end{aligned}$$

2

$$\begin{aligned} \frac{1}{4} - \frac{x}{4} &= \frac{1}{4} - \frac{1}{4} \times \left(-\frac{1}{3}\right) \\ &= \frac{1}{4} + \frac{1}{12} \\ &= \frac{1}{3} \end{aligned}$$

3

$$\begin{aligned} \frac{1}{3} - \frac{3x^2}{2} &= \frac{1}{3} - \frac{3}{2} \times \left(-\frac{1}{3}\right)^2 \\ &= \frac{1}{3} - \frac{3}{2} \times \frac{1}{9} \\ &= \frac{1}{3} - \frac{1}{6} \\ &= \frac{1}{6} \end{aligned}$$

4

$$\begin{aligned} 3x^2 + 3 &= 3 \times \left(-\frac{1}{3}\right)^2 + 3 \\ &= 3 \times \frac{1}{9} + 3 \\ &= \frac{1}{3} + 3 \\ &= \frac{10}{3} \end{aligned}$$

5

$$\begin{aligned} 6 - 15x^2 &= 6 - 15 \times \left(-\frac{1}{3}\right)^2 \\ &= 6 - 15 \times \frac{1}{9} \\ &= 6 - \frac{5}{3} \\ &= \frac{13}{3} \end{aligned}$$

6

$$\begin{aligned} 2x - \frac{1}{2} &= 2 \times \left(-\frac{1}{3}\right) - \frac{1}{2} \\ &= -\frac{2}{3} - \frac{1}{2} \\ &= -\frac{7}{6} \end{aligned}$$

$x = -2$ のとき、次の式の値を求めましょう。

①

$$7x + 9$$

②

$$-4 + \frac{x}{4}$$

③

$$-3x^2 - 6$$

④

$$-11 - 10x$$

⑤

$$7 + \frac{3x}{4}$$

⑥

$$-\frac{2x}{3} - \frac{1}{2}$$

1

$$\begin{aligned}7x + 9 &= 7 \times (-2) + 9 \\ &= -14 + 9 \\ &= -5\end{aligned}$$

2

$$\begin{aligned}-4 + \frac{x}{4} &= -4 + \frac{1}{4} \times (-2) \\ &= -4 - \frac{1}{2} \\ &= -\frac{9}{2}\end{aligned}$$

3

$$\begin{aligned}-3x^2 - 6 &= -3 \times (-2)^2 - 6 \\ &= -3 \times 4 - 6 \\ &= -12 - 6 \\ &= -18\end{aligned}$$

4

$$\begin{aligned}-11 - 10x &= -11 - 10 \times (-2) \\ &= -11 + 20 \\ &= 9\end{aligned}$$

5

$$\begin{aligned}7 + \frac{3x}{4} &= 7 + \frac{3}{4} \times (-2) \\ &= 7 - \frac{3}{2} \\ &= \frac{11}{2}\end{aligned}$$

6

$$\begin{aligned}-\frac{2x}{3} - \frac{1}{2} &= -\frac{2}{3} \times (-2) - \frac{1}{2} \\ &= \frac{4}{3} - \frac{1}{2} \\ &= \frac{5}{6}\end{aligned}$$

$x = -4$ のとき、次の式の値を求めましょう。

①

$$-\frac{3}{4} - \frac{x}{2}$$

②

$$-5x - 8$$

③

$$3x - 14$$

④

$$15 + \frac{x^2}{4}$$

⑤

$$\frac{x^2}{6}$$

⑥

$$-2 - \frac{x}{3}$$

1

$$\begin{aligned}-\frac{3}{4} - \frac{x}{2} &= -\frac{3}{4} - \frac{1}{2} \times (-4) \\ &= -\frac{3}{4} + 2 \\ &= \frac{5}{4}\end{aligned}$$

2

$$\begin{aligned}-5x - 8 &= -5 \times (-4) - 8 \\ &= 20 - 8 \\ &= 12\end{aligned}$$

3

$$\begin{aligned}3x - 14 &= 3 \times (-4) - 14 \\ &= -12 - 14 \\ &= -26\end{aligned}$$

4

$$\begin{aligned}15 + \frac{x^2}{4} &= 15 + \frac{1}{4} \times (-4)^2 \\ &= 15 + \frac{1}{4} \times 16 \\ &= 15 + 4 \\ &= 19\end{aligned}$$

5

$$\begin{aligned}\frac{x^2}{6} &= \frac{(-4)^2}{6} \\ &= \frac{16}{6} \\ &= \frac{8}{3}\end{aligned}$$

6

$$\begin{aligned}-2 - \frac{x}{3} &= -2 - \frac{1}{3} \times (-4) \\ &= -2 + \frac{4}{3} \\ &= -\frac{2}{3}\end{aligned}$$

$x = -5$ のとき、次の式の値を求めましょう。

①

$$-6 + \frac{x^2}{3}$$

②

$$14 - \frac{x^2}{2}$$

③

$$7x + 10$$

④

$$-2 - \frac{3x}{2}$$

⑤

$$-8x - 15$$

⑥

$$8 + 4x$$

1

$$\begin{aligned} -6 + \frac{x^2}{3} &= -6 + \frac{1}{3} \times (-5)^2 \\ &= -6 + \frac{1}{3} \times 25 \\ &= -6 + \frac{25}{3} \\ &= \frac{7}{3} \end{aligned}$$

2

$$\begin{aligned} 14 - \frac{x^2}{2} &= 14 - \frac{1}{2} \times (-5)^2 \\ &= 14 - \frac{1}{2} \times 25 \\ &= 14 - \frac{25}{2} \\ &= \frac{3}{2} \end{aligned}$$

3

$$\begin{aligned} 7x + 10 &= 7 \times (-5) + 10 \\ &= -35 + 10 \\ &= -25 \end{aligned}$$

4

$$\begin{aligned} -2 - \frac{3x}{2} &= -2 - \frac{3}{2} \times (-5) \\ &= -2 + \frac{15}{2} \\ &= \frac{11}{2} \end{aligned}$$

5

$$\begin{aligned} -8x - 15 &= -8 \times (-5) - 15 \\ &= 40 - 15 \\ &= 25 \end{aligned}$$

6

$$\begin{aligned} 8 + 4x &= 8 + 4 \times (-5) \\ &= 8 - 20 \\ &= -12 \end{aligned}$$

$x = -\frac{1}{2}$ のとき、次の式の値を求めましょう。

①

$$4 + 14x$$

②

$$13 - 6x$$

③

$$\frac{x^2}{2} + \frac{1}{2}$$

④

$$-\frac{1}{3} - \frac{3x}{2}$$

⑤

$$-2 + 2x$$

⑥

$$-6x + \frac{1}{3}$$

1

$$\begin{aligned}4 + 14x &= 4 + 14 \times \left(-\frac{1}{2}\right) \\ &= 4 - 7 \\ &= -3\end{aligned}$$

2

$$\begin{aligned}13 - 6x &= 13 - 6 \times \left(-\frac{1}{2}\right) \\ &= 13 + 3 \\ &= 16\end{aligned}$$

3

$$\begin{aligned}\frac{x^2}{2} + \frac{1}{2} &= \frac{1}{2} \times \left(-\frac{1}{2}\right)^2 + \frac{1}{2} \\ &= \frac{1}{2} \times \frac{1}{4} + \frac{1}{2} \\ &= \frac{1}{8} + \frac{1}{2} \\ &= \frac{5}{8}\end{aligned}$$

4

$$\begin{aligned}-\frac{1}{3} - \frac{3x}{2} &= -\frac{1}{3} - \frac{3}{2} \times \left(-\frac{1}{2}\right) \\ &= -\frac{1}{3} + \frac{3}{4} \\ &= \frac{5}{12}\end{aligned}$$

5

$$\begin{aligned}-2 + 2x &= -2 + 2 \times \left(-\frac{1}{2}\right) \\ &= -2 - 1 \\ &= -3\end{aligned}$$

6

$$\begin{aligned}-6x + \frac{1}{3} &= -6 \times \left(-\frac{1}{2}\right) + \frac{1}{3} \\ &= 3 + \frac{1}{3} \\ &= \frac{10}{3}\end{aligned}$$

$x = -\frac{2}{3}$ のとき、次の式の値を求めましょう。

①

$$15x - 10$$

②

$$\frac{2}{3} - \frac{x^2}{4}$$

③

$$7 + \frac{3x}{2}$$

④

$$14 - 6x$$

⑤

$$-6x + \frac{3}{2}$$

⑥

$$-\frac{3x^2}{2} - 3$$

1

$$\begin{aligned}
 15x - 10 &= 15 \times \left(-\frac{2}{3}\right) - 10 \\
 &= -10 - 10 \\
 &= -20
 \end{aligned}$$

2

$$\begin{aligned}
 \frac{2}{3} - \frac{x^2}{4} &= \frac{2}{3} - \frac{1}{4} \times \left(-\frac{2}{3}\right)^2 \\
 &= \frac{2}{3} - \frac{1}{4} \times \frac{4}{9} \\
 &= \frac{2}{3} - \frac{1}{9} \\
 &= \frac{5}{9}
 \end{aligned}$$

3

$$\begin{aligned}
 7 + \frac{3x}{2} &= 7 + \frac{3}{2} \times \left(-\frac{2}{3}\right) \\
 &= 7 - 1 \\
 &= 6
 \end{aligned}$$

4

$$\begin{aligned}
 14 - 6x &= 14 - 6 \times \left(-\frac{2}{3}\right) \\
 &= 14 + 4 \\
 &= 18
 \end{aligned}$$

5

$$\begin{aligned}
 -6x + \frac{3}{2} &= -6 \times \left(-\frac{2}{3}\right) + \frac{3}{2} \\
 &= 4 + \frac{3}{2} \\
 &= \frac{11}{2}
 \end{aligned}$$

6

$$\begin{aligned}
 -\frac{3x^2}{2} - 3 &= -\frac{3}{2} \times \left(-\frac{2}{3}\right)^2 - 3 \\
 &= -\frac{3}{2} \times \frac{4}{9} - 3 \\
 &= -\frac{2}{3} - 3 \\
 &= -\frac{11}{3}
 \end{aligned}$$

$x = -\frac{3}{2}$ のとき、次の式の値を求めましょう。

①

$$-3 + 2x^2$$

②

$$-9x - 7$$

③

$$14x$$

④

$$-4 + 10x$$

⑤

$$-\frac{1}{4} - 7x^2$$

⑥

$$-14 - 14x$$

1

$$\begin{aligned} -3 + 2x^2 &= -3 + 2 \times \left(-\frac{3}{2}\right)^2 \\ &= -3 + 2 \times \frac{9}{4} \\ &= -3 + \frac{9}{2} \\ &= \frac{3}{2} \end{aligned}$$

2

$$\begin{aligned} -9x - 7 &= -9 \times \left(-\frac{3}{2}\right) - 7 \\ &= \frac{27}{2} - 7 \\ &= \frac{13}{2} \end{aligned}$$

3

$$\begin{aligned} 14x &= 14 \times \left(-\frac{3}{2}\right) \\ &= -21 \end{aligned}$$

4

$$\begin{aligned} -4 + 10x &= -4 + 10 \times \left(-\frac{3}{2}\right) \\ &= -4 - 15 \\ &= -19 \end{aligned}$$

5

$$\begin{aligned} -\frac{1}{4} - 7x^2 &= -\frac{1}{4} - 7 \times \left(-\frac{3}{2}\right)^2 \\ &= -\frac{1}{4} - 7 \times \frac{9}{4} \\ &= -\frac{1}{4} - \frac{63}{4} \\ &= -16 \end{aligned}$$

6

$$\begin{aligned} -14 - 14x &= -14 - 14 \times \left(-\frac{3}{2}\right) \\ &= -14 + 21 \\ &= 7 \end{aligned}$$

$x = -12$ のとき、次の式の値を求めましょう。

①

$$-15 + \frac{x^2}{4}$$

②

$$14 - \frac{x}{2}$$

③

$$2x + 8$$

④

$$-14 - \frac{3x}{4}$$

⑤

$$-\frac{x}{4} + 12$$

⑥

$$-\frac{1}{2} - \frac{x}{2}$$

1

$$\begin{aligned}
 -15 + \frac{x^2}{4} &= -15 + \frac{1}{4} \times (-12)^2 \\
 &= -15 + \frac{1}{4} \times 144 \\
 &= -15 + 36 \\
 &= 21
 \end{aligned}$$

2

$$\begin{aligned}
 14 - \frac{x}{2} &= 14 - \frac{1}{2} \times (-12) \\
 &= 14 + 6 \\
 &= 20
 \end{aligned}$$

3

$$\begin{aligned}
 2x + 8 &= 2 \times (-12) + 8 \\
 &= -24 + 8 \\
 &= -16
 \end{aligned}$$

4

$$\begin{aligned}
 -14 - \frac{3x}{4} &= -14 - \frac{3}{4} \times (-12) \\
 &= -14 + 9 \\
 &= -5
 \end{aligned}$$

5

$$\begin{aligned}
 -\frac{x}{4} + 12 &= -\frac{1}{4} \times (-12) + 12 \\
 &= 3 + 12 \\
 &= 15
 \end{aligned}$$

6

$$\begin{aligned}
 -\frac{1}{2} - \frac{x}{2} &= -\frac{1}{2} - \frac{1}{2} \times (-12) \\
 &= -\frac{1}{2} + 6 \\
 &= \frac{11}{2}
 \end{aligned}$$

$x = -12$ のとき、次の式の値を求めましょう。

①

$$-\frac{3}{2} - \frac{2x}{3}$$

②

$$-10 - \frac{x}{3}$$

③

$$\frac{x}{3} + 4$$

④

$$-2 + \frac{x}{4}$$

⑤

$$-\frac{13}{x}$$

⑥

$$2x + 7$$

1

$$\begin{aligned} -\frac{3}{2} - \frac{2x}{3} &= -\frac{3}{2} - \frac{2}{3} \times (-12) \\ &= -\frac{3}{2} + 8 \\ &= \frac{13}{2} \end{aligned}$$

2

$$\begin{aligned} -10 - \frac{x}{3} &= -10 - \frac{1}{3} \times (-12) \\ &= -10 + 4 \\ &= -6 \end{aligned}$$

3

$$\begin{aligned} \frac{x}{3} + 4 &= \frac{1}{3} \times (-12) + 4 \\ &= -4 + 4 \\ &= 0 \end{aligned}$$

4

$$\begin{aligned} -2 + \frac{x}{4} &= -2 + \frac{1}{4} \times (-12) \\ &= -2 - 3 \\ &= -5 \end{aligned}$$

5

$$\begin{aligned} -\frac{13}{x} &= -\frac{13}{-12} \\ &= \frac{13}{12} \end{aligned}$$

6

$$\begin{aligned} 2x + 7 &= 2 \times (-12) + 7 \\ &= -24 + 7 \\ &= -17 \end{aligned}$$

$x = -\frac{1}{2}$ のとき、次の式の値を求めましょう。

①

$$-8 - 5x$$

②

$$-13 + 2x$$

③

$$3x$$

④

$$-\frac{2}{3} + 4x$$

⑤

$$-14x^2 + 4$$

⑥

$$6x - 11$$

1

$$\begin{aligned} -8 - 5x &= -8 - 5 \times \left(-\frac{1}{2}\right) \\ &= -8 + \frac{5}{2} \\ &= -\frac{11}{2} \end{aligned}$$

2

$$\begin{aligned} -13 + 2x &= -13 + 2 \times \left(-\frac{1}{2}\right) \\ &= -13 - 1 \\ &= -14 \end{aligned}$$

3

$$\begin{aligned} 3x &= 3 \times \left(-\frac{1}{2}\right) \\ &= -\frac{3}{2} \end{aligned}$$

4

$$\begin{aligned} -\frac{2}{3} + 4x &= -\frac{2}{3} + 4 \times \left(-\frac{1}{2}\right) \\ &= -\frac{2}{3} - 2 \\ &= -\frac{8}{3} \end{aligned}$$

5

$$\begin{aligned} -14x^2 + 4 &= -14 \times \left(-\frac{1}{2}\right)^2 + 4 \\ &= -14 \times \frac{1}{4} + 4 \\ &= -\frac{7}{2} + 4 \\ &= \frac{1}{2} \end{aligned}$$

6

$$\begin{aligned} 6x - 11 &= 6 \times \left(-\frac{1}{2}\right) - 11 \\ &= -3 - 11 \\ &= -14 \end{aligned}$$

$x = -\frac{1}{2}$ のとき、次の式の値を求めましょう。

①

$$5 - 2x^2$$

②

$$-13x - 8$$

③

$$10x^2$$

④

$$4 + 12x$$

⑤

$$-2 - 5x^2$$

⑥

$$-5x + \frac{3}{4}$$

1

$$\begin{aligned}5 - 2x^2 &= 5 - 2 \times \left(-\frac{1}{2}\right)^2 \\ &= 5 - 2 \times \frac{1}{4} \\ &= 5 - \frac{1}{2} \\ &= \frac{9}{2}\end{aligned}$$

2

$$\begin{aligned}-13x - 8 &= -13 \times \left(-\frac{1}{2}\right) - 8 \\ &= \frac{13}{2} - 8 \\ &= -\frac{3}{2}\end{aligned}$$

3

$$\begin{aligned}10x^2 &= 10 \times \left(-\frac{1}{2}\right)^2 \\ &= 10 \times \frac{1}{4} \\ &= \frac{5}{2}\end{aligned}$$

4

$$\begin{aligned}4 + 12x &= 4 + 12 \times \left(-\frac{1}{2}\right) \\ &= 4 - 6 \\ &= -2\end{aligned}$$

5

$$\begin{aligned}-2 - 5x^2 &= -2 - 5 \times \left(-\frac{1}{2}\right)^2 \\ &= -2 - 5 \times \frac{1}{4} \\ &= -2 - \frac{5}{4} \\ &= -\frac{13}{4}\end{aligned}$$

6

$$\begin{aligned}-5x + \frac{3}{4} &= -5 \times \left(-\frac{1}{2}\right) + \frac{3}{4} \\ &= \frac{5}{2} + \frac{3}{4} \\ &= \frac{13}{4}\end{aligned}$$

$x = -6$ のとき、次の式の値を求めましょう。

①

$$-2 + \frac{x^2}{2}$$

②

$$\frac{x}{6}$$

③

$$-3 - \frac{x}{4}$$

④

$$3 + \frac{3x}{2}$$

⑤

$$3 + \frac{x}{4}$$

⑥

$$-7 - \frac{3x}{2}$$

1

$$\begin{aligned} -2 + \frac{x^2}{2} &= -2 + \frac{1}{2} \times (-6)^2 \\ &= -2 + \frac{1}{2} \times 36 \\ &= -2 + 18 \\ &= 16 \end{aligned}$$

2

$$\begin{aligned} \frac{x}{6} &= -\frac{6}{6} \\ &= -1 \end{aligned}$$

3

$$\begin{aligned} -3 - \frac{x}{4} &= -3 - \frac{1}{4} \times (-6) \\ &= -3 + \frac{3}{2} \\ &= -\frac{3}{2} \end{aligned}$$

4

$$\begin{aligned} 3 + \frac{3x}{2} &= 3 + \frac{3}{2} \times (-6) \\ &= 3 - 9 \\ &= -6 \end{aligned}$$

5

$$\begin{aligned} 3 + \frac{x}{4} &= 3 + \frac{1}{4} \times (-6) \\ &= 3 - \frac{3}{2} \\ &= \frac{3}{2} \end{aligned}$$

6

$$\begin{aligned} -7 - \frac{3x}{2} &= -7 - \frac{3}{2} \times (-6) \\ &= -7 + 9 \\ &= 2 \end{aligned}$$

$x = -3$ のとき、次の式の値を求めましょう。

①

$$-\frac{x}{2} - 2$$

②

$$-6x - 4$$

③

$$7 - \frac{x^2}{3}$$

④

$$-\frac{1}{2} + \frac{2x}{3}$$

⑤

$$-10 + 2x^2$$

⑥

$$-10 - 4x$$

1

$$\begin{aligned} -\frac{x}{2} - 2 &= -\frac{1}{2} \times (-3) - 2 \\ &= \frac{3}{2} - 2 \\ &= -\frac{1}{2} \end{aligned}$$

2

$$\begin{aligned} -6x - 4 &= -6 \times (-3) - 4 \\ &= 18 - 4 \\ &= 14 \end{aligned}$$

3

$$\begin{aligned} 7 - \frac{x^2}{3} &= 7 - \frac{1}{3} \times (-3)^2 \\ &= 7 - \frac{1}{3} \times 9 \\ &= 7 - 3 \\ &= 4 \end{aligned}$$

4

$$\begin{aligned} -\frac{1}{2} + \frac{2x}{3} &= -\frac{1}{2} + \frac{2}{3} \times (-3) \\ &= -\frac{1}{2} - 2 \\ &= -\frac{5}{2} \end{aligned}$$

5

$$\begin{aligned} -10 + 2x^2 &= -10 + 2 \times (-3)^2 \\ &= -10 + 2 \times 9 \\ &= -10 + 18 \\ &= 8 \end{aligned}$$

6

$$\begin{aligned} -10 - 4x &= -10 - 4 \times (-3) \\ &= -10 + 12 \\ &= 2 \end{aligned}$$

$x = -12$ のとき、次の式の値を求めましょう。

①

$$10 + 2x$$

②

$$-\frac{3x}{2} + 4$$

③

$$-\frac{x}{4} - \frac{1}{2}$$

④

$$-\frac{3x}{2} + 2$$

⑤

$$5 + \frac{x}{2}$$

⑥

$$\frac{15}{x}$$

1

$$\begin{aligned}10 + 2x &= 10 + 2 \times (-12) \\ &= 10 - 24 \\ &= -14\end{aligned}$$

2

$$\begin{aligned}-\frac{3x}{2} + 4 &= -\frac{3}{2} \times (-12) + 4 \\ &= 18 + 4 \\ &= 22\end{aligned}$$

3

$$\begin{aligned}-\frac{x}{4} - \frac{1}{2} &= -\frac{1}{4} \times (-12) - \frac{1}{2} \\ &= 3 - \frac{1}{2} \\ &= \frac{5}{2}\end{aligned}$$

4

$$\begin{aligned}-\frac{3x}{2} + 2 &= -\frac{3}{2} \times (-12) + 2 \\ &= 18 + 2 \\ &= 20\end{aligned}$$

5

$$\begin{aligned}5 + \frac{x}{2} &= 5 + \frac{1}{2} \times (-12) \\ &= 5 - 6 \\ &= -1\end{aligned}$$

6

$$\begin{aligned}\frac{15}{x} &= \frac{15}{-12} \\ &= -\frac{5}{4}\end{aligned}$$

$x = -4$ のとき、次の式の値を求めましょう。

①

$$\frac{3x}{2} - 15$$

②

$$-2x^2 + 13$$

③

$$\frac{3x}{4} + \frac{1}{4}$$

④

$$-3 - \frac{x}{2}$$

⑤

$$3 + \frac{x^2}{4}$$

⑥

$$-\frac{2}{3} - \frac{3x}{4}$$

1

$$\begin{aligned}\frac{3x}{2} - 15 &= \frac{3}{2} \times (-4) - 15 \\ &= -6 - 15 \\ &= -21\end{aligned}$$

2

$$\begin{aligned}-2x^2 + 13 &= -2 \times (-4)^2 + 13 \\ &= -2 \times 16 + 13 \\ &= -32 + 13 \\ &= -19\end{aligned}$$

3

$$\begin{aligned}\frac{3x}{4} + \frac{1}{4} &= \frac{3}{4} \times (-4) + \frac{1}{4} \\ &= -3 + \frac{1}{4} \\ &= -\frac{11}{4}\end{aligned}$$

4

$$\begin{aligned}-3 - \frac{x}{2} &= -3 - \frac{1}{2} \times (-4) \\ &= -3 + 2 \\ &= -1\end{aligned}$$

5

$$\begin{aligned}3 + \frac{x^2}{4} &= 3 + \frac{1}{4} \times (-4)^2 \\ &= 3 + \frac{1}{4} \times 16 \\ &= 3 + 4 \\ &= 7\end{aligned}$$

6

$$\begin{aligned}-\frac{2}{3} - \frac{3x}{4} &= -\frac{2}{3} - \frac{3}{4} \times (-4) \\ &= -\frac{2}{3} + 3 \\ &= \frac{7}{3}\end{aligned}$$

$x = -11$ のとき、次の式の値を求めましょう。

①

$$\frac{x}{8}$$

②

$$3x + 5$$

③

$$2x + 11$$

④

$$3x + 8$$

⑤

$$\frac{2x}{3} + 5$$

⑥

$$-4 - 3x$$

1

$$\frac{x}{8} = -\frac{11}{8}$$

2

$$\begin{aligned} 3x + 5 &= 3 \times (-11) + 5 \\ &= -33 + 5 \\ &= -28 \end{aligned}$$

3

$$\begin{aligned} 2x + 11 &= 2 \times (-11) + 11 \\ &= -22 + 11 \\ &= -11 \end{aligned}$$

4

$$\begin{aligned} 3x + 8 &= 3 \times (-11) + 8 \\ &= -33 + 8 \\ &= -25 \end{aligned}$$

5

$$\begin{aligned} \frac{2x}{3} + 5 &= \frac{2}{3} \times (-11) + 5 \\ &= -\frac{22}{3} + 5 \\ &= -\frac{7}{3} \end{aligned}$$

6

$$\begin{aligned} -4 - 3x &= -4 - 3 \times (-11) \\ &= -4 + 33 \\ &= 29 \end{aligned}$$

$x = -5$ のとき、次の式の値を求めましょう。

①

$$\frac{1}{3} + \frac{x}{4}$$

②

$$-9 + 4x$$

③

$$\frac{x^2}{2} - 11$$

④

$$-\frac{x}{2} - \frac{3}{2}$$

⑤

$$-6 - \frac{3x}{4}$$

⑥

$$-4x + 9$$

1

$$\begin{aligned}\frac{1}{3} + \frac{x}{4} &= \frac{1}{3} + \frac{1}{4} \times (-5) \\ &= \frac{1}{3} - \frac{5}{4} \\ &= -\frac{11}{12}\end{aligned}$$

2

$$\begin{aligned}-9 + 4x &= -9 + 4 \times (-5) \\ &= -9 - 20 \\ &= -29\end{aligned}$$

3

$$\begin{aligned}\frac{x^2}{2} - 11 &= \frac{1}{2} \times (-5)^2 - 11 \\ &= \frac{1}{2} \times 25 - 11 \\ &= \frac{25}{2} - 11 \\ &= \frac{3}{2}\end{aligned}$$

4

$$\begin{aligned}-\frac{x}{2} - \frac{3}{2} &= -\frac{1}{2} \times (-5) - \frac{3}{2} \\ &= \frac{5}{2} - \frac{3}{2} \\ &= 1\end{aligned}$$

5

$$\begin{aligned}-6 - \frac{3x}{4} &= -6 - \frac{3}{4} \times (-5) \\ &= -6 + \frac{15}{4} \\ &= -\frac{9}{4}\end{aligned}$$

6

$$\begin{aligned}-4x + 9 &= -4 \times (-5) + 9 \\ &= 20 + 9 \\ &= 29\end{aligned}$$

問題

符号に注意して代入し、式の値を求めましょう。

$x = \frac{1}{2}$, $y = 3$ のとき、次の式の値を求めましょう。

①

$$3x^2 - \frac{y}{3}$$

②

$$3x - \frac{y}{2}$$

③

$$2x + 2y$$

④

$$x + 2y$$

⑤

$$-2x + 2y^2$$

⑥

$$-2x^2 - 2y$$

1

$$\begin{aligned}3x^2 - \frac{y}{3} &= 3 \times \left(\frac{1}{2}\right)^2 - \frac{1}{3} \times 3 \\ &= 3 \times \frac{1}{4} - \frac{1}{3} \times 3 \\ &= \frac{3}{4} - 1 \\ &= -\frac{1}{4}\end{aligned}$$

2

$$\begin{aligned}3x - \frac{y}{2} &= 3 \times \frac{1}{2} - \frac{1}{2} \times 3 \\ &= \frac{3}{2} - \frac{3}{2} \\ &= 0\end{aligned}$$

3

$$\begin{aligned}2x + 2y &= 2 \times \frac{1}{2} + 2 \times 3 \\ &= 1 + 6 \\ &= 7\end{aligned}$$

4

$$\begin{aligned}x + 2y &= \frac{1}{2} + 2 \times 3 \\ &= \frac{1}{2} + 6 \\ &= \frac{13}{2}\end{aligned}$$

5

$$\begin{aligned}-2x + 2y^2 &= -2 \times \frac{1}{2} + 2 \times 3^2 \\ &= -2 \times \frac{1}{2} + 2 \times 9 \\ &= -1 + 18 \\ &= 17\end{aligned}$$

6

$$\begin{aligned}-2x^2 - 2y &= -2 \times \left(\frac{1}{2}\right)^2 - 2 \times 3 \\ &= -2 \times \frac{1}{4} - 2 \times 3 \\ &= -\frac{1}{2} - 6 \\ &= -\frac{13}{2}\end{aligned}$$

$x = -\frac{2}{3}$ 、 $y = \frac{1}{2}$ のとき、次の式の値を求めましょう。

①

$$\frac{x}{2} - \frac{y}{3}$$

②

$$3x - 2y^2$$

③

$$3x + 2y$$

④

$$\frac{x}{2} + y^2$$

⑤

$$2x + 3y$$

⑥

$$-\frac{x}{3} - 2y$$

1

$$\begin{aligned}\frac{x}{2} - \frac{y}{3} &= \frac{1}{2} \times \left(-\frac{2}{3}\right) - \frac{1}{3} \times \frac{1}{2} \\ &= -\frac{1}{3} - \frac{1}{6} \\ &= -\frac{1}{2}\end{aligned}$$

2

$$\begin{aligned}3x - 2y^2 &= 3 \times \left(-\frac{2}{3}\right) - 2 \times \left(\frac{1}{2}\right)^2 \\ &= 3 \times \left(-\frac{2}{3}\right) - 2 \times \frac{1}{4} \\ &= -2 - \frac{1}{2} \\ &= -\frac{5}{2}\end{aligned}$$

3

$$\begin{aligned}3x + 2y &= 3 \times \left(-\frac{2}{3}\right) + 2 \times \frac{1}{2} \\ &= -2 + 1 \\ &= -1\end{aligned}$$

4

$$\begin{aligned}\frac{x}{2} + y^2 &= \frac{1}{2} \times \left(-\frac{2}{3}\right) + \left(\frac{1}{2}\right)^2 \\ &= \frac{1}{2} \times \left(-\frac{2}{3}\right) + \frac{1}{4} \\ &= -\frac{1}{3} + \frac{1}{4} \\ &= -\frac{1}{12}\end{aligned}$$

5

$$\begin{aligned}2x + 3y &= 2 \times \left(-\frac{2}{3}\right) + 3 \times \frac{1}{2} \\ &= -\frac{4}{3} + \frac{3}{2} \\ &= \frac{1}{6}\end{aligned}$$

6

$$\begin{aligned}-\frac{x}{3} - 2y &= -\frac{1}{3} \times \left(-\frac{2}{3}\right) - 2 \times \frac{1}{2} \\ &= \frac{2}{9} - 1 \\ &= -\frac{7}{9}\end{aligned}$$

$x = 1, y = \frac{2}{3}$ のとき、次の式の値を求めましょう。

①

$$-2x + 2y$$

②

$$\frac{2x^2}{3} - \frac{y}{3}$$

③

$$\frac{x}{2} + 3y$$

④

$$\frac{2x^2}{3} + 3y^2$$

⑤

$$\frac{2x^2}{3} - \frac{y}{2}$$

⑥

$$x^2 - 3y$$

1

$$\begin{aligned}
 -2x + 2y &= -2 \times 1 + 2 \times \frac{2}{3} \\
 &= -2 + \frac{4}{3} \\
 &= -\frac{2}{3}
 \end{aligned}$$

2

$$\begin{aligned}
 \frac{2x^2}{3} - \frac{y}{3} &= \frac{2}{3} \times 1^2 - \frac{1}{3} \times \frac{2}{3} \\
 &= \frac{2}{3} \times 1 - \frac{1}{3} \times \frac{2}{3} \\
 &= \frac{2}{3} - \frac{2}{9} \\
 &= \frac{4}{9}
 \end{aligned}$$

3

$$\begin{aligned}
 \frac{x}{2} + 3y &= \frac{1}{2} \times 1 + 3 \times \frac{2}{3} \\
 &= \frac{1}{2} + 2 \\
 &= \frac{5}{2}
 \end{aligned}$$

4

$$\begin{aligned}
 \frac{2x^2}{3} + 3y^2 &= \frac{2}{3} \times 1^2 + 3 \times \left(\frac{2}{3}\right)^2 \\
 &= \frac{2}{3} \times 1 + 3 \times \frac{4}{9} \\
 &= \frac{2}{3} + \frac{4}{3} \\
 &= 2
 \end{aligned}$$

5

$$\begin{aligned}
 \frac{2x^2}{3} - \frac{y}{2} &= \frac{2}{3} \times 1^2 - \frac{1}{2} \times \frac{2}{3} \\
 &= \frac{2}{3} \times 1 - \frac{1}{2} \times \frac{2}{3} \\
 &= \frac{2}{3} - \frac{1}{3} \\
 &= \frac{1}{3}
 \end{aligned}$$

6

$$\begin{aligned}
 x^2 - 3y &= 1^2 - 3 \times \frac{2}{3} \\
 &= 1 - 3 \times \frac{2}{3} \\
 &= 1 - 2 \\
 &= -1
 \end{aligned}$$

$x = -1$ 、 $y = 1$ のとき、次の式の値を求めましょう。

①

$$2x^2 + 3y^2$$

②

$$3xy$$

③

$$-\frac{x}{3} - 3y^2$$

④

$$-\frac{x^2}{3} - 2y^2$$

⑤

$$\frac{x^2}{3} + \frac{2y^2}{3}$$

⑥

$$\frac{2x^2}{3} + y$$

1

$$\begin{aligned}
 2x^2 + 3y^2 &= 2 \times (-1)^2 + 3 \times 1^2 \\
 &= 2 \times 1 + 3 \times 1 \\
 &= 2 + 3 \\
 &= 5
 \end{aligned}$$

2

$$\begin{aligned}
 3xy &= 3 \times (-1) \times 1 \\
 &= -3
 \end{aligned}$$

3

$$\begin{aligned}
 -\frac{x}{3} - 3y^2 &= -\frac{1}{3} \times (-1) - 3 \times 1^2 \\
 &= -\frac{1}{3} \times (-1) - 3 \times 1 \\
 &= \frac{1}{3} - 3 \\
 &= -\frac{8}{3}
 \end{aligned}$$

4

$$\begin{aligned}
 -\frac{x^2}{3} - 2y^2 &= -\frac{1}{3} \times (-1)^2 - 2 \times 1^2 \\
 &= -\frac{1}{3} \times 1 - 2 \times 1 \\
 &= -\frac{1}{3} - 2 \\
 &= -\frac{7}{3}
 \end{aligned}$$

5

$$\begin{aligned}
 \frac{x^2}{3} + \frac{2y^2}{3} &= \frac{1}{3} \times (-1)^2 + \frac{2}{3} \times 1^2 \\
 &= \frac{1}{3} \times 1 + \frac{2}{3} \times 1 \\
 &= \frac{1}{3} + \frac{2}{3} \\
 &= 1
 \end{aligned}$$

6

$$\begin{aligned}
 \frac{2x^2}{3} + y &= \frac{2}{3} \times (-1)^2 + 1 \\
 &= \frac{2}{3} \times 1 + 1 \\
 &= \frac{2}{3} + 1 \\
 &= \frac{5}{3}
 \end{aligned}$$

$x = \frac{1}{3}$, $y = \frac{2}{3}$ のとき、次の式の値を求めましょう。

①

$$3x + y$$

②

$$2x^2 + 3y^2$$

③

$$-3x^2 + \frac{y^2}{2}$$

④

$$2x^2 - \frac{y^2}{2}$$

⑤

$$-3x + 3y^2$$

⑥

$$-3x - 3y$$

1

$$\begin{aligned}3x + y &= 3 \times \frac{1}{3} + \frac{2}{3} \\ &= 1 + \frac{2}{3} \\ &= \frac{5}{3}\end{aligned}$$

2

$$\begin{aligned}2x^2 + 3y^2 &= 2 \times \left(\frac{1}{3}\right)^2 + 3 \times \left(\frac{2}{3}\right)^2 \\ &= 2 \times \frac{1}{9} + 3 \times \frac{4}{9} \\ &= \frac{2}{9} + \frac{4}{3} \\ &= \frac{14}{9}\end{aligned}$$

3

$$\begin{aligned}-3x^2 + \frac{y^2}{2} &= -3 \times \left(\frac{1}{3}\right)^2 + \frac{1}{2} \times \left(\frac{2}{3}\right)^2 \\ &= -3 \times \frac{1}{9} + \frac{1}{2} \times \frac{4}{9} \\ &= -\frac{1}{3} + \frac{2}{9} \\ &= -\frac{1}{9}\end{aligned}$$

4

$$\begin{aligned}2x^2 - \frac{y^2}{2} &= 2 \times \left(\frac{1}{3}\right)^2 - \frac{1}{2} \times \left(\frac{2}{3}\right)^2 \\ &= 2 \times \frac{1}{9} - \frac{1}{2} \times \frac{4}{9} \\ &= \frac{2}{9} - \frac{2}{9} \\ &= 0\end{aligned}$$

5

$$\begin{aligned}-3x + 3y^2 &= -3 \times \frac{1}{3} + 3 \times \left(\frac{2}{3}\right)^2 \\ &= -3 \times \frac{1}{3} + 3 \times \frac{4}{9} \\ &= -1 + \frac{4}{3} \\ &= \frac{1}{3}\end{aligned}$$

6

$$\begin{aligned}-3x - 3y &= -3 \times \frac{1}{3} - 3 \times \frac{2}{3} \\ &= -1 - 2 \\ &= -3\end{aligned}$$

$x = -1, y = -\frac{2}{3}$ のとき、次の式の値を求めましょう。

①

$$-\frac{x^2}{3} - y$$

②

$$-\frac{x^2}{2} + 2y$$

③

$$2x^2 + 3y^2$$

④

$$2x^2 - 2y^2$$

⑤

$$\frac{x^2}{3} + 3y^2$$

⑥

$$-2x^2 + 2y$$

1

$$\begin{aligned}
 & -\frac{x^2}{3} - y \\
 &= -\frac{1}{3} \times (-1)^2 - 1 \times \left(-\frac{2}{3}\right) \\
 &= -\frac{1}{3} \times 1 - 1 \times \left(-\frac{2}{3}\right) \\
 &= -\frac{1}{3} + \frac{2}{3} \\
 &= \frac{1}{3}
 \end{aligned}$$

2

$$\begin{aligned}
 & -\frac{x^2}{2} + 2y \\
 &= -\frac{1}{2} \times (-1)^2 + 2 \times \left(-\frac{2}{3}\right) \\
 &= -\frac{1}{2} \times 1 + 2 \times \left(-\frac{2}{3}\right) \\
 &= -\frac{1}{2} - \frac{4}{3} \\
 &= -\frac{11}{6}
 \end{aligned}$$

3

$$\begin{aligned}
 & 2x^2 + 3y^2 \\
 &= 2 \times (-1)^2 + 3 \times \left(-\frac{2}{3}\right)^2 \\
 &= 2 \times 1 + 3 \times \frac{4}{9} \\
 &= 2 + \frac{4}{3} \\
 &= \frac{10}{3}
 \end{aligned}$$

4

$$\begin{aligned}
 & 2x^2 - 2y^2 \\
 &= 2 \times (-1)^2 - 2 \times \left(-\frac{2}{3}\right)^2 \\
 &= 2 \times 1 - 2 \times \frac{4}{9} \\
 &= 2 - \frac{8}{9} \\
 &= \frac{10}{9}
 \end{aligned}$$

5

$$\begin{aligned}
 & \frac{x^2}{3} + 3y^2 \\
 &= \frac{1}{3} \times (-1)^2 + 3 \times \left(-\frac{2}{3}\right)^2 \\
 &= \frac{1}{3} \times 1 + 3 \times \frac{4}{9} \\
 &= \frac{1}{3} + \frac{4}{3} \\
 &= \frac{5}{3}
 \end{aligned}$$

6

$$\begin{aligned}
 & -2x^2 + 2y \\
 &= -2 \times (-1)^2 + 2 \times \left(-\frac{2}{3}\right) \\
 &= -2 \times 1 + 2 \times \left(-\frac{2}{3}\right) \\
 &= -2 - \frac{4}{3} \\
 &= -\frac{10}{3}
 \end{aligned}$$

$x = 2, y = -2$ のとき、次の式の値を求めましょう。

①

$$-\frac{2x}{3} - 3y$$

②

$$-x - \frac{y^2}{2}$$

③

$$3x - 2y^2$$

④

$$-x^2 - y$$

⑤

$$\frac{x^2}{2} + \frac{2y}{3}$$

⑥

$$-3x + 2y$$

1

$$\begin{aligned} -\frac{2x}{3} - 3y &= -\frac{2}{3} \times 2 - 3 \times (-2) \\ &= -\frac{4}{3} + 6 \\ &= \frac{14}{3} \end{aligned}$$

2

$$\begin{aligned} -x - \frac{y^2}{2} &= -1 \times 2 - \frac{1}{2} \times (-2)^2 \\ &= -1 \times 2 - \frac{1}{2} \times 4 \\ &= -2 - 2 \\ &= -4 \end{aligned}$$

3

$$\begin{aligned} 3x - 2y^2 &= 3 \times 2 - 2 \times (-2)^2 \\ &= 3 \times 2 - 2 \times 4 \\ &= 6 - 8 \\ &= -2 \end{aligned}$$

4

$$\begin{aligned} -x^2 - y &= -1 \times 2^2 - 1 \times (-2) \\ &= -1 \times 4 - 1 \times (-2) \\ &= -4 + 2 \\ &= -2 \end{aligned}$$

5

$$\begin{aligned} \frac{x^2}{2} + \frac{2y}{3} &= \frac{1}{2} \times 2^2 + \frac{2}{3} \times (-2) \\ &= \frac{1}{2} \times 4 + \frac{2}{3} \times (-2) \\ &= 2 - \frac{4}{3} \\ &= \frac{2}{3} \end{aligned}$$

6

$$\begin{aligned} -3x + 2y &= -3 \times 2 + 2 \times (-2) \\ &= -6 - 4 \\ &= -10 \end{aligned}$$

$x = \frac{2}{3}$, $y = \frac{2}{3}$ のとき、次の式の値を求めましょう。

①

$$2x + 3y$$

②

$$\frac{x}{2} - \frac{y}{2}$$

③

$$\frac{2x}{3} - \frac{y}{3}$$

④

$$\frac{2x}{3} - 3y^2$$

⑤

$$-3x^2 - \frac{y^2}{2}$$

⑥

$$-3x - \frac{y}{2}$$

1

$$\begin{aligned}
 2x + 3y &= 2 \times \frac{2}{3} + 3 \times \frac{2}{3} \\
 &= \frac{4}{3} + 2 \\
 &= \frac{10}{3}
 \end{aligned}$$

2

$$\begin{aligned}
 \frac{x}{2} - \frac{y}{2} &= \frac{1}{2} \times \frac{2}{3} - \frac{1}{2} \times \frac{2}{3} \\
 &= \frac{1}{3} - \frac{1}{3} \\
 &= 0
 \end{aligned}$$

3

$$\begin{aligned}
 \frac{2x}{3} - \frac{y}{3} &= \frac{2}{3} \times \frac{2}{3} - \frac{1}{3} \times \frac{2}{3} \\
 &= \frac{4}{9} - \frac{2}{9} \\
 &= \frac{2}{9}
 \end{aligned}$$

4

$$\begin{aligned}
 \frac{2x}{3} - 3y^2 &= \frac{2}{3} \times \frac{2}{3} - 3 \times \left(\frac{2}{3}\right)^2 \\
 &= \frac{2}{3} \times \frac{2}{3} - 3 \times \frac{4}{9} \\
 &= \frac{4}{9} - \frac{4}{3} \\
 &= -\frac{8}{9}
 \end{aligned}$$

5

$$\begin{aligned}
 -3x^2 - \frac{y^2}{2} &= -3 \times \left(\frac{2}{3}\right)^2 - \frac{1}{2} \times \left(\frac{2}{3}\right)^2 \\
 &= -3 \times \frac{4}{9} - \frac{1}{2} \times \frac{4}{9} \\
 &= -\frac{4}{3} - \frac{2}{9} \\
 &= -\frac{14}{9}
 \end{aligned}$$

6

$$\begin{aligned}
 -3x - \frac{y}{2} &= -3 \times \frac{2}{3} - \frac{1}{2} \times \frac{2}{3} \\
 &= -2 - \frac{1}{3} \\
 &= -\frac{7}{3}
 \end{aligned}$$

$x = -3$ 、 $y = -2$ のとき、次の式の値を求めましょう。

①

$$-x^2 + 3y$$

②

$$-3x + 2y^2$$

③

$$-\frac{x^2}{3} - y$$

④

$$-3x - 2y$$

⑤

$$-\frac{x^2}{2} - 3y$$

⑥

$$\frac{x}{2} + 2y^2$$

1

$$\begin{aligned}
 & -x^2 + 3y \\
 & = -1 \times (-3)^2 + 3 \times (-2) \\
 & = -1 \times 9 + 3 \times (-2) \\
 & = -9 - 6 \\
 & = -15
 \end{aligned}$$

2

$$\begin{aligned}
 & -3x + 2y^2 \\
 & = -3 \times (-3) + 2 \times (-2)^2 \\
 & = -3 \times (-3) + 2 \times 4 \\
 & = 9 + 8 \\
 & = 17
 \end{aligned}$$

3

$$\begin{aligned}
 & -\frac{x^2}{3} - y \\
 & = -\frac{1}{3} \times (-3)^2 - 1 \times (-2) \\
 & = -\frac{1}{3} \times 9 - 1 \times (-2) \\
 & = -3 + 2 \\
 & = -1
 \end{aligned}$$

4

$$\begin{aligned}
 -3x - 2y & = -3 \times (-3) - 2 \times (-2) \\
 & = 9 + 4 \\
 & = 13
 \end{aligned}$$

5

$$\begin{aligned}
 & -\frac{x^2}{2} - 3y \\
 & = -\frac{1}{2} \times (-3)^2 - 3 \times (-2) \\
 & = -\frac{1}{2} \times 9 - 3 \times (-2) \\
 & = -\frac{9}{2} + 6 \\
 & = \frac{3}{2}
 \end{aligned}$$

6

$$\begin{aligned}
 \frac{x}{2} + 2y^2 & = \frac{1}{2} \times (-3) + 2 \times (-2)^2 \\
 & = \frac{1}{2} \times (-3) + 2 \times 4 \\
 & = -\frac{3}{2} + 8 \\
 & = \frac{13}{2}
 \end{aligned}$$

$x = \frac{2}{3}$, $y = 2$ のとき、次の式の値を求めましょう。

①

$$-2x + \frac{y}{2}$$

②

$$\frac{2xy}{3}$$

③

$$x + \frac{y}{2}$$

④

$$\frac{x}{2} + y^2$$

⑤

$$2x^2 - \frac{y}{2}$$

⑥

$$-3x + \frac{y}{2}$$

1

$$\begin{aligned} -2x + \frac{y}{2} &= -2 \times \frac{2}{3} + \frac{1}{2} \times 2 \\ &= -\frac{4}{3} + 1 \\ &= -\frac{1}{3} \end{aligned}$$

2

$$\begin{aligned} \frac{2xy}{3} &= \frac{2}{3} \times \frac{2}{3} \times 2 \\ &= \frac{8}{9} \end{aligned}$$

3

$$\begin{aligned} x + \frac{y}{2} &= \frac{2}{3} + \frac{1}{2} \times 2 \\ &= \frac{2}{3} + 1 \\ &= \frac{5}{3} \end{aligned}$$

4

$$\begin{aligned} \frac{x}{2} + y^2 &= \frac{1}{2} \times \frac{2}{3} + 2^2 \\ &= \frac{1}{2} \times \frac{2}{3} + 4 \\ &= \frac{1}{3} + 4 \\ &= \frac{13}{3} \end{aligned}$$

5

$$\begin{aligned} 2x^2 - \frac{y}{2} &= 2 \times \left(\frac{2}{3}\right)^2 - \frac{1}{2} \times 2 \\ &= 2 \times \frac{4}{9} - \frac{1}{2} \times 2 \\ &= \frac{8}{9} - 1 \\ &= -\frac{1}{9} \end{aligned}$$

6

$$\begin{aligned} -3x + \frac{y}{2} &= -3 \times \frac{2}{3} + \frac{1}{2} \times 2 \\ &= -2 + 1 \\ &= -1 \end{aligned}$$

$x = -1$ 、 $y = 2$ のとき、次の式の値を求めましょう。

①

$$3x - \frac{y^2}{3}$$

②

$$2x^2 - 3y$$

③

$$-\frac{2x^2}{3} - \frac{y^2}{3}$$

④

$$-3x^2 + \frac{y}{2}$$

⑤

$$3x^2 - \frac{y^2}{2}$$

⑥

$$\frac{x}{3} + \frac{y}{2}$$

1

$$\begin{aligned}
 3x - \frac{y^2}{3} &= 3 \times (-1) - \frac{1}{3} \times 2^2 \\
 &= 3 \times (-1) - \frac{1}{3} \times 4 \\
 &= -3 - \frac{4}{3} \\
 &= -\frac{13}{3}
 \end{aligned}$$

2

$$\begin{aligned}
 2x^2 - 3y &= 2 \times (-1)^2 - 3 \times 2 \\
 &= 2 \times 1 - 3 \times 2 \\
 &= 2 - 6 \\
 &= -4
 \end{aligned}$$

3

$$\begin{aligned}
 -\frac{2x^2}{3} - \frac{y^2}{3} & \\
 = -\frac{2}{3} \times (-1)^2 - \frac{1}{3} \times 2^2 & \\
 = -\frac{2}{3} \times 1 - \frac{1}{3} \times 4 & \\
 = -\frac{2}{3} - \frac{4}{3} & \\
 = -2 &
 \end{aligned}$$

4

$$\begin{aligned}
 -3x^2 + \frac{y}{2} &= -3 \times (-1)^2 + \frac{1}{2} \times 2 \\
 &= -3 \times 1 + \frac{1}{2} \times 2 \\
 &= -3 + 1 \\
 &= -2
 \end{aligned}$$

5

$$\begin{aligned}
 3x^2 - \frac{y^2}{2} &= 3 \times (-1)^2 - \frac{1}{2} \times 2^2 \\
 &= 3 \times 1 - \frac{1}{2} \times 4 \\
 &= 3 - 2 \\
 &= 1
 \end{aligned}$$

6

$$\begin{aligned}
 \frac{x}{3} + \frac{y}{2} &= \frac{1}{3} \times (-1) + \frac{1}{2} \times 2 \\
 &= -\frac{1}{3} + 1 \\
 &= \frac{2}{3}
 \end{aligned}$$

$x = -\frac{1}{2}$ 、 $y = \frac{1}{3}$ のとき、次の式の値を求めましょう。

①

$$-2x - y$$

②

$$-2x + y$$

③

$$-x - y$$

④

$$-\frac{2x}{3} - 3y$$

⑤

$$-\frac{x}{2} + 3y^2$$

⑥

$$x - 3y^2$$

1

$$\begin{aligned}
 -2x - y &= -2 \times \left(-\frac{1}{2}\right) - 1 \times \frac{1}{3} \\
 &= 1 - \frac{1}{3} \\
 &= \frac{2}{3}
 \end{aligned}$$

2

$$\begin{aligned}
 -2x + y &= -2 \times \left(-\frac{1}{2}\right) + \frac{1}{3} \\
 &= 1 + \frac{1}{3} \\
 &= \frac{4}{3}
 \end{aligned}$$

3

$$\begin{aligned}
 -x - y &= -1 \times \left(-\frac{1}{2}\right) - 1 \times \frac{1}{3} \\
 &= \frac{1}{2} - \frac{1}{3} \\
 &= \frac{1}{6}
 \end{aligned}$$

4

$$\begin{aligned}
 -\frac{2x}{3} - 3y &= -\frac{2}{3} \times \left(-\frac{1}{2}\right) - 3 \times \frac{1}{3} \\
 &= \frac{1}{3} - 1 \\
 &= -\frac{2}{3}
 \end{aligned}$$

5

$$\begin{aligned}
 &-\frac{x}{2} + 3y^2 \\
 &= -\frac{1}{2} \times \left(-\frac{1}{2}\right) + 3 \times \left(\frac{1}{3}\right)^2 \\
 &= -\frac{1}{2} \times \left(-\frac{1}{2}\right) + 3 \times \frac{1}{9} \\
 &= \frac{1}{4} + \frac{1}{3} \\
 &= \frac{7}{12}
 \end{aligned}$$

6

$$\begin{aligned}
 x - 3y^2 &= -\frac{1}{2} - 3 \times \left(\frac{1}{3}\right)^2 \\
 &= -\frac{1}{2} - 3 \times \frac{1}{9} \\
 &= -\frac{1}{2} - \frac{1}{3} \\
 &= -\frac{5}{6}
 \end{aligned}$$

$x = \frac{1}{2}$, $y = -2$ のとき、次の式の値を求めましょう。

①

$$x + \frac{y^2}{2}$$

②

$$-\frac{2x}{3} - \frac{y^2}{2}$$

③

$$\frac{x}{2} - \frac{y^2}{3}$$

④

$$\frac{2x}{3} + 2y$$

⑤

$$-x + y$$

⑥

$$\frac{x}{2} + \frac{y}{3}$$

1

$$\begin{aligned}
 x + \frac{y^2}{2} &= \frac{1}{2} + \frac{1}{2} \times (-2)^2 \\
 &= \frac{1}{2} + \frac{1}{2} \times 4 \\
 &= \frac{1}{2} + 2 \\
 &= \frac{5}{2}
 \end{aligned}$$

2

$$\begin{aligned}
 -\frac{2x}{3} - \frac{y^2}{2} &= -\frac{2}{3} \times \frac{1}{2} - \frac{1}{2} \times (-2)^2 \\
 &= -\frac{2}{3} \times \frac{1}{2} - \frac{1}{2} \times 4 \\
 &= -\frac{1}{3} - 2 \\
 &= -\frac{7}{3}
 \end{aligned}$$

3

$$\begin{aligned}
 \frac{x}{2} - \frac{y^2}{3} &= \frac{1}{2} \times \frac{1}{2} - \frac{1}{3} \times (-2)^2 \\
 &= \frac{1}{2} \times \frac{1}{2} - \frac{1}{3} \times 4 \\
 &= \frac{1}{4} - \frac{4}{3} \\
 &= -\frac{13}{12}
 \end{aligned}$$

4

$$\begin{aligned}
 \frac{2x}{3} + 2y &= \frac{2}{3} \times \frac{1}{2} + 2 \times (-2) \\
 &= \frac{1}{3} - 4 \\
 &= -\frac{11}{3}
 \end{aligned}$$

5

$$\begin{aligned}
 -x + y &= -1 \times \frac{1}{2} - 2 \\
 &= -\frac{1}{2} - 2 \\
 &= -\frac{5}{2}
 \end{aligned}$$

6

$$\begin{aligned}
 \frac{x}{2} + \frac{y}{3} &= \frac{1}{2} \times \frac{1}{2} + \frac{1}{3} \times (-2) \\
 &= \frac{1}{4} - \frac{2}{3} \\
 &= -\frac{5}{12}
 \end{aligned}$$

$x = -1, y = \frac{1}{2}$ のとき、次の式の値を求めましょう。

①

$$-\frac{x}{2} - y$$

②

$$-\frac{x^2}{3} + 2y$$

③

$$2x^2 + \frac{y}{3}$$

④

$$\frac{2x^2}{3} - y$$

⑤

$$\frac{2x}{3} + \frac{2y^2}{3}$$

⑥

$$-x + y$$

1

$$\begin{aligned}
 -\frac{x}{2} - y &= -\frac{1}{2} \times (-1) - 1 \times \frac{1}{2} \\
 &= \frac{1}{2} - \frac{1}{2} \\
 &= 0
 \end{aligned}$$

2

$$\begin{aligned}
 -\frac{x^2}{3} + 2y &= -\frac{1}{3} \times (-1)^2 + 2 \times \frac{1}{2} \\
 &= -\frac{1}{3} \times 1 + 2 \times \frac{1}{2} \\
 &= -\frac{1}{3} + 1 \\
 &= \frac{2}{3}
 \end{aligned}$$

3

$$\begin{aligned}
 2x^2 + \frac{y}{3} &= 2 \times (-1)^2 + \frac{1}{3} \times \frac{1}{2} \\
 &= 2 \times 1 + \frac{1}{3} \times \frac{1}{2} \\
 &= 2 + \frac{1}{6} \\
 &= \frac{13}{6}
 \end{aligned}$$

4

$$\begin{aligned}
 \frac{2x^2}{3} - y &= \frac{2}{3} \times (-1)^2 - 1 \times \frac{1}{2} \\
 &= \frac{2}{3} \times 1 - 1 \times \frac{1}{2} \\
 &= \frac{2}{3} - \frac{1}{2} \\
 &= \frac{1}{6}
 \end{aligned}$$

5

$$\begin{aligned}
 \frac{2x}{3} + \frac{2y^2}{3} &= \frac{2}{3} \times (-1) + \frac{2}{3} \times \left(\frac{1}{2}\right)^2 \\
 &= \frac{2}{3} \times (-1) + \frac{2}{3} \times \frac{1}{4} \\
 &= -\frac{2}{3} + \frac{1}{6} \\
 &= -\frac{1}{2}
 \end{aligned}$$

6

$$\begin{aligned}
 -x + y &= -1 \times (-1) + \frac{1}{2} \\
 &= 1 + \frac{1}{2} \\
 &= \frac{3}{2}
 \end{aligned}$$

$x = \frac{1}{2}$, $y = -\frac{1}{2}$ のとき、次の式の値を求めましょう。

①

$$-x^2 + \frac{y^2}{2}$$

②

$$x^2 - 2y$$

③

$$-x + \frac{y}{3}$$

④

$$-2x + \frac{y}{2}$$

⑤

$$\frac{2x^2}{3} - y^2$$

⑥

$$-x^2 + 2y$$

1

$$\begin{aligned}
 & -x^2 + \frac{y^2}{2} \\
 &= -1 \times \left(\frac{1}{2}\right)^2 + \frac{1}{2} \times \left(-\frac{1}{2}\right)^2 \\
 &= -1 \times \frac{1}{4} + \frac{1}{2} \times \frac{1}{4} \\
 &= -\frac{1}{4} + \frac{1}{8} \\
 &= -\frac{1}{8}
 \end{aligned}$$

2

$$\begin{aligned}
 x^2 - 2y &= \left(\frac{1}{2}\right)^2 - 2 \times \left(-\frac{1}{2}\right) \\
 &= \frac{1}{4} - 2 \times \left(-\frac{1}{2}\right) \\
 &= \frac{1}{4} + 1 \\
 &= \frac{5}{4}
 \end{aligned}$$

3

$$\begin{aligned}
 -x + \frac{y}{3} &= -1 \times \frac{1}{2} + \frac{1}{3} \times \left(-\frac{1}{2}\right) \\
 &= -\frac{1}{2} - \frac{1}{6} \\
 &= -\frac{2}{3}
 \end{aligned}$$

4

$$\begin{aligned}
 -2x + \frac{y}{2} &= -2 \times \frac{1}{2} + \frac{1}{2} \times \left(-\frac{1}{2}\right) \\
 &= -1 - \frac{1}{4} \\
 &= -\frac{5}{4}
 \end{aligned}$$

5

$$\begin{aligned}
 & \frac{2x^2}{3} - y^2 \\
 &= \frac{2}{3} \times \left(\frac{1}{2}\right)^2 - 1 \times \left(-\frac{1}{2}\right)^2 \\
 &= \frac{2}{3} \times \frac{1}{4} - 1 \times \frac{1}{4} \\
 &= \frac{1}{6} - \frac{1}{4} \\
 &= -\frac{1}{12}
 \end{aligned}$$

6

$$\begin{aligned}
 & -x^2 + 2y \\
 &= -1 \times \left(\frac{1}{2}\right)^2 + 2 \times \left(-\frac{1}{2}\right) \\
 &= -1 \times \frac{1}{4} + 2 \times \left(-\frac{1}{2}\right) \\
 &= -\frac{1}{4} - 1 \\
 &= -\frac{5}{4}
 \end{aligned}$$

$x = \frac{1}{2}$, $y = -2$ のとき、次の式の値を求めましょう。

①

$$\frac{x^2}{3} + \frac{2y^2}{3}$$

②

$$-\frac{x}{3} + \frac{y^2}{2}$$

③

$$-2x^2 + \frac{y^2}{2}$$

④

$$-3x^2 - 2y$$

⑤

$$2x^2 - \frac{2y^2}{3}$$

⑥

$$2x - y^2$$

1

$$\begin{aligned}
 & \frac{x^2}{3} + \frac{2y^2}{3} \\
 &= \frac{1}{3} \times \left(\frac{1}{2}\right)^2 + \frac{2}{3} \times (-2)^2 \\
 &= \frac{1}{3} \times \frac{1}{4} + \frac{2}{3} \times 4 \\
 &= \frac{1}{12} + \frac{8}{3} \\
 &= \frac{11}{4}
 \end{aligned}$$

2

$$\begin{aligned}
 -\frac{x}{3} + \frac{y^2}{2} &= -\frac{1}{3} \times \frac{1}{2} + \frac{1}{2} \times (-2)^2 \\
 &= -\frac{1}{3} \times \frac{1}{2} + \frac{1}{2} \times 4 \\
 &= -\frac{1}{6} + 2 \\
 &= \frac{11}{6}
 \end{aligned}$$

3

$$\begin{aligned}
 & -2x^2 + \frac{y^2}{2} \\
 &= -2 \times \left(\frac{1}{2}\right)^2 + \frac{1}{2} \times (-2)^2 \\
 &= -2 \times \frac{1}{4} + \frac{1}{2} \times 4 \\
 &= -\frac{1}{2} + 2 \\
 &= \frac{3}{2}
 \end{aligned}$$

4

$$\begin{aligned}
 & -3x^2 - 2y \\
 &= -3 \times \left(\frac{1}{2}\right)^2 - 2 \times (-2) \\
 &= -3 \times \frac{1}{4} - 2 \times (-2) \\
 &= -\frac{3}{4} + 4 \\
 &= \frac{13}{4}
 \end{aligned}$$

5

$$\begin{aligned}
 & 2x^2 - \frac{2y^2}{3} \\
 &= 2 \times \left(\frac{1}{2}\right)^2 - \frac{2}{3} \times (-2)^2 \\
 &= 2 \times \frac{1}{4} - \frac{2}{3} \times 4 \\
 &= \frac{1}{2} - \frac{8}{3} \\
 &= -\frac{13}{6}
 \end{aligned}$$

6

$$\begin{aligned}
 2x - y^2 &= 2 \times \frac{1}{2} - 1 \times (-2)^2 \\
 &= 2 \times \frac{1}{2} - 1 \times 4 \\
 &= 1 - 4 \\
 &= -3
 \end{aligned}$$

$x = \frac{2}{3}$, $y = \frac{2}{3}$ のとき、次の式の値を求めましょう。

①

$$x + 3y$$

②

$$x + \frac{y^2}{2}$$

③

$$-\frac{x^2}{2} - 3y^2$$

④

$$-\frac{2x}{3} + \frac{y^2}{2}$$

⑤

$$-\frac{x}{2} + \frac{2y}{3}$$

⑥

$$-3x + y^2$$

1

$$\begin{aligned}x + 3y &= \frac{2}{3} + 3 \times \frac{2}{3} \\ &= \frac{2}{3} + 2 \\ &= \frac{8}{3}\end{aligned}$$

2

$$\begin{aligned}x + \frac{y^2}{2} &= \frac{2}{3} + \frac{1}{2} \times \left(\frac{2}{3}\right)^2 \\ &= \frac{2}{3} + \frac{1}{2} \times \frac{4}{9} \\ &= \frac{2}{3} + \frac{2}{9} \\ &= \frac{8}{9}\end{aligned}$$

3

$$\begin{aligned}-\frac{x^2}{2} - 3y^2 & \\ &= -\frac{1}{2} \times \left(\frac{2}{3}\right)^2 - 3 \times \left(\frac{2}{3}\right)^2 \\ &= -\frac{1}{2} \times \frac{4}{9} - 3 \times \frac{4}{9} \\ &= -\frac{2}{9} - \frac{4}{3} \\ &= -\frac{14}{9}\end{aligned}$$

4

$$\begin{aligned}-\frac{2x}{3} + \frac{y^2}{2} &= -\frac{2}{3} \times \frac{2}{3} + \frac{1}{2} \times \left(\frac{2}{3}\right)^2 \\ &= -\frac{2}{3} \times \frac{2}{3} + \frac{1}{2} \times \frac{4}{9} \\ &= -\frac{4}{9} + \frac{2}{9} \\ &= -\frac{2}{9}\end{aligned}$$

5

$$\begin{aligned}-\frac{x}{2} + \frac{2y}{3} &= -\frac{1}{2} \times \frac{2}{3} + \frac{2}{3} \times \frac{2}{3} \\ &= -\frac{1}{3} + \frac{4}{9} \\ &= \frac{1}{9}\end{aligned}$$

6

$$\begin{aligned}-3x + y^2 &= -3 \times \frac{2}{3} + \left(\frac{2}{3}\right)^2 \\ &= -3 \times \frac{2}{3} + \frac{4}{9} \\ &= -2 + \frac{4}{9} \\ &= -\frac{14}{9}\end{aligned}$$

$x = 2, y = -\frac{1}{2}$ のとき、次の式の値を求めましょう。

①

$$3x + 3y$$

②

$$-2x + 3y^2$$

③

$$-x^2 + y$$

④

$$-\frac{x}{3} - \frac{y}{2}$$

⑤

$$\frac{x}{3} + 3y$$

⑥

$$x^2 - \frac{2y}{3}$$

1

$$\begin{aligned}
 3x + 3y &= 3 \times 2 + 3 \times \left(-\frac{1}{2}\right) \\
 &= 6 - \frac{3}{2} \\
 &= \frac{9}{2}
 \end{aligned}$$

2

$$\begin{aligned}
 -2x + 3y^2 &= -2 \times 2 + 3 \times \left(-\frac{1}{2}\right)^2 \\
 &= -2 \times 2 + 3 \times \frac{1}{4} \\
 &= -4 + \frac{3}{4} \\
 &= -\frac{13}{4}
 \end{aligned}$$

3

$$\begin{aligned}
 -x^2 + y &= -1 \times 2^2 - \frac{1}{2} \\
 &= -1 \times 4 - \frac{1}{2} \\
 &= -4 - \frac{1}{2} \\
 &= -\frac{9}{2}
 \end{aligned}$$

4

$$\begin{aligned}
 -\frac{x}{3} - \frac{y}{2} &= -\frac{1}{3} \times 2 - \frac{1}{2} \times \left(-\frac{1}{2}\right) \\
 &= -\frac{2}{3} + \frac{1}{4} \\
 &= -\frac{5}{12}
 \end{aligned}$$

5

$$\begin{aligned}
 \frac{x}{3} + 3y &= \frac{1}{3} \times 2 + 3 \times \left(-\frac{1}{2}\right) \\
 &= \frac{2}{3} - \frac{3}{2} \\
 &= -\frac{5}{6}
 \end{aligned}$$

6

$$\begin{aligned}
 x^2 - \frac{2y}{3} &= 2^2 - \frac{2}{3} \times \left(-\frac{1}{2}\right) \\
 &= 4 - \frac{2}{3} \times \left(-\frac{1}{2}\right) \\
 &= 4 + \frac{1}{3} \\
 &= \frac{13}{3}
 \end{aligned}$$

$x = \frac{1}{2}$, $y = -\frac{1}{2}$ のとき、次の式の値を求めましょう。

①

$$3x^2 + \frac{2y}{3}$$

②

$$-\frac{x^2}{3} + y$$

③

$$\frac{x}{3} - y^2$$

④

$$-\frac{2x^2}{3} + 2y$$

⑤

$$-2x^2 - \frac{2y}{3}$$

⑥

$$-3x + 3y^2$$

1

$$\begin{aligned}
 & 3x^2 + \frac{2y}{3} \\
 &= 3 \times \left(\frac{1}{2}\right)^2 + \frac{2}{3} \times \left(-\frac{1}{2}\right) \\
 &= 3 \times \frac{1}{4} + \frac{2}{3} \times \left(-\frac{1}{2}\right) \\
 &= \frac{3}{4} - \frac{1}{3} \\
 &= \frac{5}{12}
 \end{aligned}$$

2

$$\begin{aligned}
 -\frac{x^2}{3} + y &= -\frac{1}{3} \times \left(\frac{1}{2}\right)^2 - \frac{1}{2} \\
 &= -\frac{1}{3} \times \frac{1}{4} - \frac{1}{2} \\
 &= -\frac{1}{12} - \frac{1}{2} \\
 &= -\frac{7}{12}
 \end{aligned}$$

3

$$\begin{aligned}
 \frac{x}{3} - y^2 &= \frac{1}{3} \times \frac{1}{2} - 1 \times \left(-\frac{1}{2}\right)^2 \\
 &= \frac{1}{3} \times \frac{1}{2} - 1 \times \frac{1}{4} \\
 &= \frac{1}{6} - \frac{1}{4} \\
 &= -\frac{1}{12}
 \end{aligned}$$

4

$$\begin{aligned}
 & -\frac{2x^2}{3} + 2y \\
 &= -\frac{2}{3} \times \left(\frac{1}{2}\right)^2 + 2 \times \left(-\frac{1}{2}\right) \\
 &= -\frac{2}{3} \times \frac{1}{4} + 2 \times \left(-\frac{1}{2}\right) \\
 &= -\frac{1}{6} - 1 \\
 &= -\frac{7}{6}
 \end{aligned}$$

5

$$\begin{aligned}
 & -2x^2 - \frac{2y}{3} \\
 &= -2 \times \left(\frac{1}{2}\right)^2 - \frac{2}{3} \times \left(-\frac{1}{2}\right) \\
 &= -2 \times \frac{1}{4} - \frac{2}{3} \times \left(-\frac{1}{2}\right) \\
 &= -\frac{1}{2} + \frac{1}{3} \\
 &= -\frac{1}{6}
 \end{aligned}$$

6

$$\begin{aligned}
 -3x + 3y^2 &= -3 \times \frac{1}{2} + 3 \times \left(-\frac{1}{2}\right)^2 \\
 &= -3 \times \frac{1}{2} + 3 \times \frac{1}{4} \\
 &= -\frac{3}{2} + \frac{3}{4} \\
 &= -\frac{3}{4}
 \end{aligned}$$

$x = -\frac{1}{2}$ 、 $y = -1$ のとき、次の式の値を求めましょう。

①

$$-\frac{2x}{3} - 3y^2$$

②

$$-2x^2 - 3y$$

③

$$2x^2 + y$$

④

$$-\frac{2x}{3} - y^2$$

⑤

$$\frac{2x^2}{3} + \frac{y}{2}$$

⑥

$$-x - \frac{y}{2}$$

1

$$\begin{aligned}
 & -\frac{2x}{3} - 3y^2 \\
 = & -\frac{2}{3} \times \left(-\frac{1}{2}\right) - 3 \times (-1)^2 \\
 = & -\frac{2}{3} \times \left(-\frac{1}{2}\right) - 3 \times 1 \\
 = & \frac{1}{3} - 3 \\
 = & -\frac{8}{3}
 \end{aligned}$$

2

$$\begin{aligned}
 & -2x^2 - 3y \\
 = & -2 \times \left(-\frac{1}{2}\right)^2 - 3 \times (-1) \\
 = & -2 \times \frac{1}{4} - 3 \times (-1) \\
 = & -\frac{1}{2} + 3 \\
 = & \frac{5}{2}
 \end{aligned}$$

3

$$\begin{aligned}
 2x^2 + y &= 2 \times \left(-\frac{1}{2}\right)^2 - 1 \\
 &= 2 \times \frac{1}{4} - 1 \\
 &= \frac{1}{2} - 1 \\
 &= -\frac{1}{2}
 \end{aligned}$$

4

$$\begin{aligned}
 & -\frac{2x}{3} - y^2 \\
 = & -\frac{2}{3} \times \left(-\frac{1}{2}\right) - 1 \times (-1)^2 \\
 = & -\frac{2}{3} \times \left(-\frac{1}{2}\right) - 1 \times 1 \\
 = & \frac{1}{3} - 1 \\
 = & -\frac{2}{3}
 \end{aligned}$$

5

$$\begin{aligned}
 & \frac{2x^2}{3} + \frac{y}{2} \\
 = & \frac{2}{3} \times \left(-\frac{1}{2}\right)^2 + \frac{1}{2} \times (-1) \\
 = & \frac{2}{3} \times \frac{1}{4} + \frac{1}{2} \times (-1) \\
 = & \frac{1}{6} - \frac{1}{2} \\
 = & -\frac{1}{3}
 \end{aligned}$$

6

$$\begin{aligned}
 -x - \frac{y}{2} &= -1 \times \left(-\frac{1}{2}\right) - \frac{1}{2} \times (-1) \\
 &= \frac{1}{2} + \frac{1}{2} \\
 &= 1
 \end{aligned}$$