

2年 休校中の数学課題① 解説編

1.

$$(1) \quad 6x + 5x = (6 + 5)x \\ = 11x$$

$$(2) \quad a + 7a = (1 + 7)a \\ = 8a$$

$$(3) \quad 9y - 4y = (9 - 4)y \\ = 5y$$

$$(4) \quad 3x - x = (3 - 1)x \\ = 2x$$

$$(5) \quad (x - 4) + (2x + 1) = x - 4 + 2x + 1 \\ = 3x - 3$$

$$(6) \quad (5a - 4) + (-3a + 4) = 5a - 4 - 3a + 4 \\ = 2a$$

$$(7) \quad 2x + (1 - 6x) = 2x + 1 - 6x \\ = -4x + 1$$

$$(8) \quad (4x - 3) - (x + 5) = 4x - 3 - x - 5 \\ = 3x - 8$$

$$(9) \quad (7y - 11) - (3y - 6) = 7y - 11 - 3y + 6 \\ = 4y - 5$$

$$(10) \quad 2a - (4a + 1) = 2a - 4a - 1 \\ = -2a - 1$$

$$(11) \quad 5a \times 7 = 5 \times a \times 7 \\ = 5 \times 7 \times a \\ = 35a$$

$$(12) \quad -4 \times (-8x) = -4 \times (-8) \times x \\ = 32x$$

$$(13) \quad -6x \times \frac{4}{3} = -6 \times x \times \frac{4}{3} \\ = -6 \times \frac{4}{3} \times x \\ = -8x$$

$$(14) \quad -5(4x + 3) = (-5) \times 4x + (-5) \times 3 \\ = -20x - 15$$

$$(15) \quad (-x - 2) \times 4 = -x \times 4 + (-2) \times 4 \\ = -4x - 8$$

$$(16) \quad \frac{1}{2}(8b - 6) = \frac{1}{2} \times 8b + \frac{1}{2} \times (-6) \\ = 4b - 3$$

$$(17) \quad \frac{x+2}{3} \times 18 = (x+2) \times 6 \\ = 6x + 12$$

$$(18) \quad -4 \times \frac{5x-7}{2} = -2(5x-7) \\ = -10x + 14$$

$$(19) \quad 28b \div (-4) = \frac{28b}{-4} \\ = -7b$$

$$(20) \quad -16x \div (-8) = \frac{-16x}{-8} \\ = 2x$$

$$(21) \quad 6a \div \frac{3}{4} = 6a \times \frac{4}{3} \\ = 8a$$

$$(22) \quad 15y \div \left(-\frac{3}{5}\right) = 15y \times \left(-\frac{5}{3}\right) \\ = -25y$$

$$(23) \quad (8x - 12) \div 4 = (8x - 12) \times \frac{1}{4} \\ = 2x - 3$$

$$(24) \quad (21a - 28) \div (-7) = (21a - 28) \times \left(-\frac{1}{7}\right) \\ = -3a + 4$$

$$(25) \quad 5(x + 2) + 3(x - 4) = 5x + 10 + 3x - 12 \\ = 8x - 2$$

$$(26) \quad 2(4x - 1) + 6(x + 2) = 8x - 2 + 6x + 12 \\ = 14x + 10$$

$$(27) \quad 4(3x - 5) - 7(2x - 3) = 12x - 20 - 14x + 21 \\ = -2x + 1$$

$$(28) \quad -3(2x + 1) - (4 - 5x) = -6x - 3 - 4 + 5x \\ = -x - 7$$

$$(29) \quad \frac{1}{3}(6a - 3) + \frac{1}{2}(2a + 10) = 2a - 1 + a + 5 \\ = 3a + 4$$

$$(30) \quad \frac{3}{4}(-8x + 12) - \frac{5}{3}(-9x + 6) = -6x + 9 + 15x - 10 \\ = 9x - 1$$

2年 休校中の数学課題② 解説編

1.

$$(1) \quad x \times 6 \times y \times x = 6 \times x \times x \times y \\ = 6x^2y$$

$$(2) \quad (x - y) \times 4 = 4(x - y)$$

$$(3) \quad a \div (-5) = \frac{a}{-5} \\ = -\frac{a}{5}$$

$$(4) \quad 2 \times m - n \times (-1) = 2m - (-n) \\ = 2m + n$$

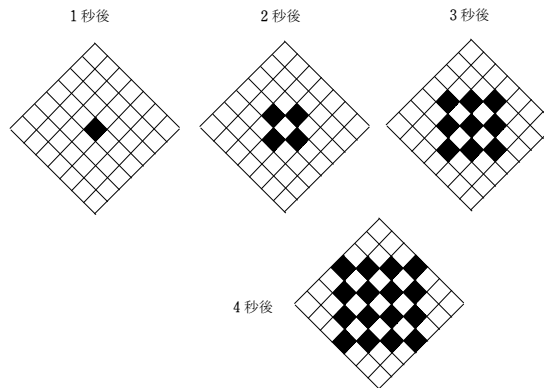
2.

$$(1) \quad (a + b) \times 4 = 4(a + b)$$

$$(2) \quad a \text{ m は } (a \times 100) \text{ cm であるから} \\ a \times 100 + b \times 3 = 100a + 3b \text{ (cm)}$$

3.

見る角度を変えると、下の図のようになる。



1 秒後の黒マスのは 1 × 1

2 秒後の黒マスのは 2 × 2

3 秒後の黒マスのは 3 × 3

4 秒後の黒マスのは 4 × 4

よって、 n 秒後の黒マスのは

$$n \times n = n^2$$

4.

$$(1) \quad 3x^2 - 5x = 3 \times (-2) \times (-2) - 5 \times (-2) \\ = 12 + 10 \\ = 22$$

(2) 最初に式を計算してから代入するとよい。

$$3(2x - 3) - 4(x - 4) = 6x - 9 - 4x + 16 \\ = 2x + 7$$

$x = -2$ を $2x + 7$ に代入すると

$$2x + 7 = 2 \times (-2) + 7 \\ = -4 + 7 \\ = 3$$

5.

$$(1) \quad x \times 4 = y \\ 4x = y$$

$$(2) \quad b \times 3 < a \\ 3b < a$$

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$$1. (1) \quad \begin{aligned} -6x &= -7x + 2 \\ -6x + 7x &= 2 \end{aligned}$$

$$x = 2$$

$$(2) \quad \begin{aligned} -7 - 2x &= 9 \\ -2x &= 9 + 7 \\ -2x &= 16 \end{aligned}$$

$$x = -8$$

$$(3) \quad \begin{aligned} 1 + x &= -x - 7 \\ x + x &= -7 - 1 \\ 2x &= -8 \end{aligned}$$

$$x = -4$$

$$(4) \quad \begin{aligned} -4x + 9 &= -7x - 9 \\ -4x + 7x &= -9 - 9 \\ 3x &= -18 \end{aligned}$$

$$x = -6$$

$$(5) \quad \begin{aligned} 13 - 2x &= 3x + 3 \\ -2x - 3x &= 3 - 13 \\ -5x &= -10 \end{aligned}$$

$$x = 2$$

$$(6) \quad \begin{aligned} -9x + 7 &= -6x - 14 \\ -9x + 6x &= -14 - 7 \\ -3x &= -21 \end{aligned}$$

$$x = 7$$

$$(7) \quad \begin{aligned} -4 &= 29 - 11x \\ 11x &= 29 + 4 \\ 11x &= 33 \end{aligned}$$

$$x = 3$$

$$(8) \quad \begin{aligned} 6 + 5x &= 9 + 7x \\ 5x - 7x &= 9 - 6 \\ -2x &= 3 \end{aligned}$$

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

$$(9) \quad \begin{aligned} x &= 2(x + 5) \\ x &= 2x + 10 \\ -x &= 10 \end{aligned}$$

$$x = -10$$

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

$$\text{別解} \quad 3(x - 2) = 1$$

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

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

$$x = \frac{7}{3}$$

$$(11) \quad \begin{aligned} 4(x + 1) &= 5 + 3x \\ 4x + 4 &= 5 + 3x \end{aligned}$$

$$x = 1$$

$$(12) \quad \begin{aligned} -(x - 1) &= -3(2x + 3) \\ -x + 1 &= -6x - 9 \\ 5x &= -10 \end{aligned}$$

$$x = -2$$

$$(13) \quad \begin{aligned} 2(x - 3) &= 3(2x + 1) \\ 2x - 6 &= 6x + 3 \\ -4x &= 9 \end{aligned}$$

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

$$(14) \quad \begin{aligned} 4 - (2 - x) &= 4(x - 1) \\ 4 - 2 + x &= 4x - 4 \\ -3x &= -6 \end{aligned}$$

$$x = 2$$

$$(15) \quad \begin{aligned} 0.2x - 0.3 &= 0.5 \\ 2x - 3 &= 5 \\ 2x &= 8 \end{aligned}$$

$$x = 4$$

$$(16) \quad \begin{aligned} 2 - 0.6x &= 0.2 \\ 20 - 6x &= 2 \\ -6x &= -18 \end{aligned}$$

$$x = 3$$

$$(17) \quad \begin{aligned} 0.4x - 0.1 &= -0.2x + 0.8 \\ 4x - 1 &= -2x + 8 \\ 6x &= 9 \end{aligned}$$

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

$$(18) \quad \begin{aligned} -0.09x + 0.25 &= -0.04x \\ -9x + 25 &= -4x \\ -5x &= -25 \end{aligned}$$

$$x = 5$$

$$(19) \quad \begin{aligned} 0.15x - 0.08 &= 0.2x - 0.03 \\ 15x - 8 &= 20x - 3 \\ -5x &= 5 \end{aligned}$$

$$x = -1$$

$$(20) \quad \begin{aligned} 0.1(x - 2) &= 0.3 \\ x - 2 &= 3 \end{aligned}$$

$$x = 5$$

$$(21) \quad \begin{aligned} \frac{3}{2}x + 1 &= -\frac{1}{2} \\ 3x + 2 &= -1 \\ 3x &= -3 \end{aligned}$$

$$x = -1$$

$$(22) \quad \begin{aligned} \frac{x}{3} &= \frac{x}{4} - 3 \\ 4x &= 3x - 36 \end{aligned}$$

$$x = -36$$

$$(23) \quad \begin{aligned} \frac{5}{3} - \frac{x}{3} &= -\frac{5}{6}x - \frac{1}{3} \\ 10 - 2x &= -5x - 2 \\ 3x &= -12 \end{aligned}$$

$$x = -4$$

$$(24) \quad \begin{aligned} \frac{3}{4}x - \frac{1}{2} &= \frac{x}{3} + \frac{1}{3} \\ 9x - 6 &= 4x + 4 \\ 5x &= 10 \end{aligned}$$

$$x = 2$$

$$(25) \quad \begin{aligned} \frac{x + 1}{2} &= 3 \\ x + 1 &= 6 \end{aligned}$$

$$x = 5$$

$$(26) \quad \begin{aligned} \frac{2x - 5}{3} &= \frac{5x - 2}{4} \\ 4(2x - 5) &= 3(5x - 2) \\ 8x - 20 &= 15x - 6 \\ -7x &= 14 \end{aligned}$$

$$x = -2$$