

確認テスト	No.1 中学校の復習 (その1)			
	年	組	番	名前
				/20

1. 次の計算をせよ。

(1) $(-24) \div (-4)^2 \times 6$

(2) $2(3x+1) - 3(x-2)$

(3) $ab^2 \div 3a^2b \times (-3a)^2$

(4) $\frac{x-y}{2} - \frac{2x+5y}{3}$

(5) $(2x-3y)(3x+2y)$

(6) $(x-3)^2 - (x+5)(x-4)$

(7) $\sqrt{48} \div \sqrt{6} \times \sqrt{2}$

(8) $\sqrt{3} - 5\sqrt{2} + 6\sqrt{2} - 3\sqrt{3}$

2. $2x+3y=9$ を y について解け。

3. $x = -\frac{1}{2}, y = \frac{1}{2}$ のとき, $(4xy^2 - 2x^2y) \div 2xy$ の値を求めよ。

小テスト	No.3 数と式 整式, 整式の加法・減法・乗法			
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				／20

1. 次の整式を x について降べきの順に整理せよ。

(1) $x + 3x^2 - 2 + 4x^3 - 5x$

(2) $2x^2 + 3xy + y^2 - 2x + 3y + 2$

2. 次の計算をせよ。

(1) $(-2x^2)^3$

(2) $16xy^3 \times \left(\frac{1}{2}x^2y\right)^3$

3. 次の式を展開せよ。

(1) $(x-3)(2x^2+x+3)$

(2) $(x-y+4)(x-y-8)$

(3) $(a+2b-c)^2$

(4) $(x+1)(x+2)(x-1)(x-2)$

小テスト	No.4 数と式 因数分解				
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1. 次の式を因数分解せよ。

(1) $a(x-y) - b(y-x)$

(2) $x^2 - 4xy + 4y^2$

(3) $9x^3y - 16xy^3$

(4) $2x^2 - 3x + 1$

(5) $2x^2 + xy - 6y^2$

(6) $(x-y)(x-y+5) + 6$

(7) $a^2 + b^2 + 2ab + bc + ca$

(8) $3x^2 - 5xy - 2y^2 + 2x + 3y - 1$

確認テスト解答 No.1 中学校の復習 (その1)

1. (1) $(-24) \div (-4)^2 \times 6 = (-24) \div 16 \times 6 = -\frac{24 \times 6}{16} = -9$

(2) $2(3x+1) - 3(x-2) = 6x+2 - 3x+6 = 3x+8$

(3) $ab^2 \div 3a^2b \times (-3a)^2 = \frac{ab^2 \times 9a^2}{3a^2b} = 3ab$

(4) $\frac{x-y}{2} - \frac{2x+5y}{3} = \frac{3(x-y) - 2(2x+5y)}{6} = \frac{3x-3y-4x-10y}{6} = \frac{-x-13y}{6}$

(5) $(2x-3y)(3x+2y) = 6x^2 + 4xy - 9xy - 6y^2 = 6x^2 - 5xy - 6y^2$

(6) $(x-3)^2 - (x+5)(x-4) = (x^2 - 6x + 9) - (x^2 + x - 20) = -7x + 29$

(7) $\sqrt{48} \div \sqrt{6} \times \sqrt{2} = \frac{\sqrt{48} \times \sqrt{2}}{\sqrt{6}} = \frac{4\sqrt{3} \times \sqrt{2}}{\sqrt{6}} = 4$

(8) $\sqrt{3} - 5\sqrt{2} + 6\sqrt{2} - 3\sqrt{3} = \sqrt{2} - 2\sqrt{3}$ (各2点)

2. $2x + 3y = 9$

$3y = -2x + 9$

$y = -\frac{2}{3}x + 3$ (2点)

3. $(4xy^2 - 2x^2y) \div 2xy = 2y - x$

$= 2 \times \frac{1}{2} - \left(-\frac{1}{2}\right)$

$= 1 + \frac{1}{2} = \frac{3}{2}$ (2点)

$$\begin{aligned}
 1. (1) \quad & x + 3x^2 - 2 + 4x^3 - 5x \\
 & = 4x^3 + 3x^2 + (x - 5x) - 2 \\
 & = 4x^3 + 3x^2 - 4x - 2
 \end{aligned}$$

$$\begin{aligned}
 (2) \quad & 2x^2 + 3xy + y^2 - 2x + 3y + 2 \\
 & = 2x^2 + (3y - 2)x + (y^2 + 3y + 2)
 \end{aligned}
 \tag{各 2 点}$$

$$\begin{aligned}
 2. (1) \quad & (-2x^2)^3 = (-2)^3 \cdot (x^2)^3 \\
 & = -8x^6
 \end{aligned}$$

$$\begin{aligned}
 (2) \quad & 16xy^3 \times \left(\frac{1}{2}x^2y\right)^3 = 16xy^3 \times \frac{1}{8}x^6y^3 \\
 & = 2x^7y^6
 \end{aligned}
 \tag{各 2 点}$$

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

$$\begin{aligned}
 (2) \quad & (x - y + 4)(x - y - 8) = (x - y)^2 - 4(x - y) - 32 \\
 & = x^2 - 2xy + y^2 - 4x + 4y - 32
 \end{aligned}$$

$$\begin{aligned}
 (3) \quad & (a + 2b - c)^2 = a^2 + (2b)^2 + (-c)^2 + 2 \cdot a \cdot 2b + 2 \cdot 2b \cdot (-c) + 2 \cdot (-c) \cdot a \\
 & = a^2 + 4b^2 + c^2 + 4ab - 4bc - 2ca
 \end{aligned}$$

(別解)

$$\begin{aligned}
 (a + 2b - c)^2 & = \{(a + 2b) - c\}^2 \\
 & = (a + 2b)^2 - 2(a + 2b)c + c^2 \\
 & = a^2 + 4ab + 4b^2 - 2ac - 4bc + c^2 \\
 & = a^2 + 4b^2 + c^2 + 4ab - 4bc - 2ca
 \end{aligned}$$

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

(別解)

$$\begin{aligned}
 (x + 1)(x + 2)(x - 1)(x - 2) & = \{(x + 1)(x + 2)\}\{(x - 1)(x - 2)\} \\
 & = (x^2 + 3x + 2)(x^2 - 3x + 2) \\
 & = \{(x^2 + 2) + 3x\}\{(x^2 + 2) - 3x\} \\
 & = (x^2 + 2)^2 - 9x^2 \\
 & = x^4 + 4x^2 + 4 - 9x^2 \\
 & = x^4 - 5x^2 + 4
 \end{aligned}
 \tag{各 3 点}$$

1. (1) $a(x-y) - b(y-x) = a(x-y) + b(x-y)$
 $= (a+b)(x-y)$ (2点)

(2) $x^2 - 4xy + 4y^2 = (x-2y)^2$ (2点)

(3) $9x^3y - 16xy^3 = xy(9x^2 - 16y^2)$
 $= xy(3x+4y)(3x-4y)$ (2点)

(4) $2x^2 - 3x + 1 = (2x-1)(x-1)$ (2点)

(5) $2x^2 + xy - 6y^2 = (2x-3y)(x+2y)$ (2点)

(6) $(x-y)(x-y+5) + 6 = (x-y)^2 + 5(x-y) + 6$
 $= \{(x-y) + 2\}\{(x-y) + 3\}$
 $= (x-y+2)(x-y+3)$ (3点)

(7) $a^2 + b^2 + 2ab + bc + ca = (a+b)c + (a^2 + 2ab + b^2)$
 $= (a+b)c + (a+b)^2$
 $= (a+b)\{c + (a+b)\}$
 $= (a+b)(a+b+c)$ (3点)

(8) $3x^2 - 5xy - 2y^2 + 2x + 3y - 1$
 $= 3x^2 + (-5y+2)x + (-2y^2+3y-1)$
 $= 3x^2 + (-5y+2)x - (2y^2-3y+1)$
 $= 3x^2 + (-5y+2)x - (2y-1)(y-1)$
 $= \{3x + (y-1)\}\{x - (2y-1)\}$
 $= (3x+y-1)(x-2y+1)$

$$\begin{array}{r} \hline 3 \quad \quad \quad y-1 \longrightarrow y-1 \\ 1 \quad \quad \quad - (2y-1) \longrightarrow -6y+3 \\ \hline \quad \quad \quad \quad \quad \quad \quad \quad -5y+2 \end{array}$$

(4点)