

$$\textcircled{1} \quad 16 - 2 * 4 + 3 * 6 \div 3^2 + 10^2 \div 5^2 - 4 * 3 + 8$$

$$16 - 2 * 4 + 3 * 6 \div 9 + 100 \div 25 - 4 * 3 + 8$$

$$16 - 8 + 18 \div 9 + 100 \div 25 - 12 + 8$$

$$16 - 8 + 9 + 4 - 12 + 8$$

$$16 - 8 + 13 - 12 + 8$$

$$8 + 1 + 8$$

$$16 + 1$$

$$\underline{17} \quad \times$$

Parenthesis
 Exponents
 Multi
 Division
 Addition
 Subtraction

$$\textcircled{2} \quad -2^3 + 6^2 * 3^2 + 8 * 6 + 34 \div 2$$

$$-8 + 36 * 9 + 8 * 6 + 34 \div 2$$

$$-8 + 324 + 48 + 34 \div 2$$

$$-8 + 324 + 48 + 17$$

$$+ 316 + 48 + 17$$

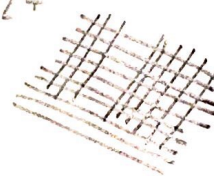
$$316 + 65$$

$$\underline{381} \quad \times$$

$$\begin{array}{r} 1 \\ 316 \\ + 65 \\ \hline 381 \end{array}$$

$$\begin{array}{r} 2 \overline{) 341} \\ 2 \overline{) 34} \\ \hline 17 \\ 2 \overline{) 17} \\ \hline 8 \end{array}$$

$$\begin{array}{r} 48 + 8 \\ 10 + 7 \\ \hline 65 \end{array}$$



$$\begin{array}{r} 5 \\ 36 \\ 9 \\ \hline 324 \end{array}$$

$$36$$

$$9 + 9 + 9$$

$$\begin{array}{r} 1 \\ 27 \\ 27 \\ \hline 54 \end{array}$$

$$\textcircled{3} \quad [24 - (3 - 5)^3] \div [(8 - 3) \div 5 + 7]$$

$$[24 - (-2)^3] \div [5 \div 5 + 7]$$

$$[24 - (-8)] \div [5 \div 5 + 7]$$

$$[24 + 8] \div [1 + 7]$$

$$[32] \div [8] = \frac{32}{8} = \underline{4} \quad \times$$

$$8 + 8 = 16 + 8 = 24 + 8 = 32$$

$$(4) (8 + 6\sqrt{25} - 4 \times 2^2) - (3 \times 6 \div \sqrt{36})$$

$$(8 + 6\sqrt{25} - 4 \times 4) - (3 \times 6 \div \sqrt{36})$$

$$(8 + 6 \times 5 - 4 \times 4) - (3 \times 6 \div \sqrt{36})$$

$$(8 + 30 - 16) - (18 \div 6)$$

$$(38 - 16) - (3)$$

$$38 - 10 = 28 - 6 = 22$$

$$22 - 3$$

$$\underline{19}$$

Paren
Expon
Mult,
Divis
Add
Sub

(5)

$$\left[\frac{\frac{1}{3}}{\frac{1}{2}} \right] + \left[\frac{\frac{2}{5}}{\frac{1}{4}} \right] - \left[\frac{\frac{3}{8}}{\frac{1}{4}} \right] = \frac{\frac{1}{3} \cdot \frac{1}{4} + \frac{2}{5} \cdot \frac{1}{2} - \frac{3}{8} \cdot \frac{1}{2}}{\frac{1}{2} \cdot \frac{1}{4}}$$

$$= \frac{\frac{1}{12} + \frac{2}{10} - \frac{3}{16}}{\frac{1}{8}}$$

$$\frac{1}{8}$$

$$\frac{1}{8}$$

$$\frac{10 \cdot 16 + 2 \cdot 12 \cdot 16 - 3 \cdot 12 \cdot 10}{12 \cdot 10 \cdot 16}$$

$$12 \cdot 10 \cdot 16$$

$$160 + 192 - 360$$

$$\frac{1}{8}$$

$$= \left[\frac{-8}{\frac{1}{8}} \right] = -64$$

$$\begin{array}{r} 10 \\ 16 \\ \hline 60 \\ 10 \\ \hline 160 \end{array}$$

$$\begin{array}{r} 12 \\ 12 \\ \hline 72 \\ 12 \\ \hline 192 \end{array}$$

$$\begin{array}{r} 120 \\ 3 \\ \hline 360 \end{array}$$

$$\begin{array}{r} 160 \\ 192 \\ \hline 352 \end{array}$$

$$\textcircled{6} \left(21 - \frac{3}{4} \right) \div \left(4 \cdot \frac{2}{3} - 2 \right)$$

$$\frac{4 \cdot 21}{4} - \frac{3}{4}$$

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

$$\frac{4 \cdot 21 - 3}{4} = \frac{81}{4}$$

$$\frac{8 - 2 \cdot 3}{3} = \frac{8 - 6}{3} = \frac{2}{3}$$

$$\frac{21}{\frac{4}{84} - 3} = 81$$

$$\left(\frac{81}{4} \right) \div \frac{2}{3} = \left[\frac{\frac{81}{4}}{\frac{2}{3}} \right] = \frac{81 \cdot 3}{8}$$

$$\frac{81}{3} = 243$$

$$= \frac{243}{2} \times$$

$$\textcircled{7} (2x^2 + 50x - 5) - (8x^2 - 5x + 6x^3)$$

$$\cancel{2x^2} + \cancel{50x} - 5 - \cancel{8x^2} + 5x - \cancel{6x^3}$$

$$-6x^3 - 6x^2 + 55x - 5 =$$

$$\textcircled{7} \cancel{8x^3} - \cancel{3x^4} + \cancel{5x} + 2 + \cancel{2x} + \cancel{2x^4} - \cancel{3x^3} + 3$$

$$= 8x^3 - 3x^3 - 3x^4 + 2x^4 + 5x + 2x + 2 + 3$$

$$= 5x^3 - 1x^4 + 7x + 5$$

$$= -x^4 + 5x^3 + 7x + 5$$

$$\begin{aligned} \textcircled{8} \quad & 2x^2 + \cancel{50x} - 5 - \cancel{2x^2} + \cancel{8x} - 6x^3 \\ & -6x^2 + 55x - 5 - 6x^3 \\ & -6x^3 - 6x^2 + 55x - 5 \quad \checkmark \end{aligned}$$

$$\begin{aligned} \textcircled{9} \quad & (7a^2 + 8ab - 2b^2) - [(6a^2 - 4ab + 6) + (3a^2 + 8ab - b^2)] \\ & \cancel{7a^2} + \cancel{8ab} - \cancel{2b^2} - \cancel{6a^2} + \cancel{4ab} - 6 - \cancel{3a^2} - \cancel{8ab} + \cancel{b^2} \\ & (7a^2 - 6a^2 - 3a^2) + (8ab + 4ab - 8ab) + (-2b^2 + b^2) \\ & \quad a^2 - 3a^2 \qquad \qquad \qquad + -1b^2 \\ & (-2a^2) + (4ab) - b^2 - 6 \quad \checkmark \end{aligned}$$

$$\begin{aligned} \textcircled{10} \quad & (8x - 7x^3 + 3) - (3x^2 - 8x + 2) + (-2x^3 - 4x^2 + 2x) \\ & \cancel{8x} - \cancel{7x^3} + 3 - \cancel{3x^2} + \cancel{8x} - 2 - \cancel{2x^3} - \cancel{4x^2} + \cancel{2x} \\ & 18x - 9x^3 - 9x^2 + 3 - 2 \\ & -9x^3 - 9x^2 + 18x + 1 \quad \checkmark \\ & \cancel{8x} - \cancel{7x^3} + 3 - \cancel{3x^2} + \cancel{8x} - 2 - \cancel{2x^3} - \cancel{4x^2} + \cancel{2x} \\ & -7x^3 - 2x^3 - 3x^2 - 4x^2 + 8x + 8x + 2x + 3 - 2 \\ & -9x^3 - 7x^2 + 18x + 1 \quad \checkmark \end{aligned}$$

$$\textcircled{25} \quad \frac{(x-6)(\cancel{x+6})}{(\cancel{x+6})(x+3)} = \frac{x-6}{x+3}$$

$$\begin{aligned} \textcircled{24} \quad & \frac{x^2 - 8x + 15}{3-x} = \\ & = \frac{(x-5)(x-3)}{(3-x)} \quad \frac{-x+3}{\checkmark} \end{aligned}$$

$$(23) \quad \frac{3x+1}{5} + \frac{2-5x}{6} = \frac{6(3x+1)+5(2-5x)}{5 \cdot 6} =$$

$$\frac{18x+6+10-25x}{30} = \frac{-7x+16}{30}$$

$$(22) \quad \frac{2x}{x^2-4} + \frac{1}{x-2} + \frac{2}{x+2} = \frac{\cancel{2x} + \cancel{x}+2 + \cancel{2x}-4}{(x+2)(x-2)}$$

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

$$(21) \quad \frac{\cancel{(x+1)}(x+1)}{\cancel{(x+1)}(x-1)} = \frac{(x+1)}{(x-1)} \div \frac{y^3-1}{y-1}$$

$$= \left[\frac{\frac{x+1}{x-1}}{\frac{y^3-1}{y-1}} \right] = \frac{\cancel{(y-1)}(\cancel{y-1})}{\cancel{(x-1)}(y^3-1)} = \frac{x+1}{x^3-1}$$

$$(11) \quad 16x^3 - 6x^2 + 12x - 72x^2 + 27x - 54$$

$$16x^3 - 78x^2 + 39x - 54$$

$$\begin{aligned} (12) \quad & (16x - y)(4x + y) \\ & 64x^2 - 4xy + 16xy - y^2 \\ & 64x^2 + 12xy - y^2 \end{aligned}$$

$$(13) \quad (y^3 - 3)^2$$

$$\begin{aligned} & y^6 - 2y^3 \cdot 3 + 9 \\ & y^6 - 6y^3 + 9 \end{aligned}$$

$$(14) \quad (4x^2 + 6y^4)^3$$

$$64x^6 + 3x$$

$$\begin{aligned} (15) \quad & \frac{27y^3z^3 - 15y^6z^2}{3y^2z} \quad \frac{\cancel{3y^2z}(9y^2z^2 - 5y^4z)}{\cancel{3y^2z}} \end{aligned}$$

$$(17) \quad -8y^4 + 12y^3 - 16y^2 + 4y$$

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

$$(18) \quad a^x(a^2 - 3a + 10)$$