

$$1. (w) \left(2x + \frac{x}{5} \right) = 2(x^2 + 8x)$$

①

$$w = \frac{2x(x+8)}{x\left(2 + \frac{1}{5}\right)}$$

$$w = \frac{10(x+8)}{11}$$

$$\begin{aligned} 2. A &= \left(\frac{x^2-9}{x} \right) \left(\frac{x^3-6x}{x^2+5x+6} \right) \\ &= \frac{(x+3)(x-3)x(x+2)(x-2)}{x(x+3)(x+2)} \\ &= (x-3)(x-2) \end{aligned}$$

$$3. 6y^2 - 5y - 6 = \frac{(3y-2) + (y-4)}{2} h$$

$$\frac{2(2y-3)(3y+2)}{4y-6} = h$$

$$\frac{2(2y-3)(3y+2)}{2(2y-3)} = h$$

$$h = 3y+2$$

$$4. \frac{(6x-9)(2x+4)}{2} \div \frac{(2x-3)(3x+6)}{2} \quad (2)$$

$$= \frac{3(2x-3)2(x+2)}{3(2x-3)(x+2)}$$

$$= 2$$

$$5. \frac{\left(\frac{x-2}{3}\right)\left(\frac{x+1}{4}\right)}{\left(\frac{x-3}{2}\right)\left(\frac{x+1}{2}\right)} = \frac{(x-2)(x+1)(4)}{12(x-3)(x+1)}$$

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

$$6. S = \frac{x(x+1)}{2} + \frac{x(x+3)}{2}$$

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

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

$$= x^2+2x$$

$$7. \frac{(x+4)(x+4)(2x-2)}{2(x+4)^2 + \cancel{4(x+4)}(2x-2) \cancel{*}} = \frac{2(x+4)(x+4)(x-1)}{2(x+4)[(x+4)+4(x-1)]}$$

$$= \frac{(x+4)(x-1)}{5x}$$

$$8. \pi \left(\frac{d+1}{2} \right)^2 - \pi \left(\frac{d}{2} \right)^2$$

(3)

$$= \frac{\pi}{4} [(d+1)^2 - d^2]$$

$$= \frac{\pi}{4} (2d+1)$$

$$9. \left(\frac{2x^2 - 3x + 1}{x+2} \right) \left(\frac{2x^2 + 10x + 12}{x-1} \right) \div 2$$

$$= \frac{(2x-1)(x-1)^2(x+2)(x+3)}{2(x+2)(x-1)}$$

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

$$10. \left[\frac{5(x-1) + 2(x+3)}{(x+3)(x-1)} \right] \left[\frac{x-2}{(x+3)(x-2)} \right]$$

$$= \left(\frac{5x-5+2x+6}{(x+3)(x-1)} \right) \left(\frac{1}{x+3} \right)$$

$$= \frac{7x+1}{(x-1)(x+3)^2}$$