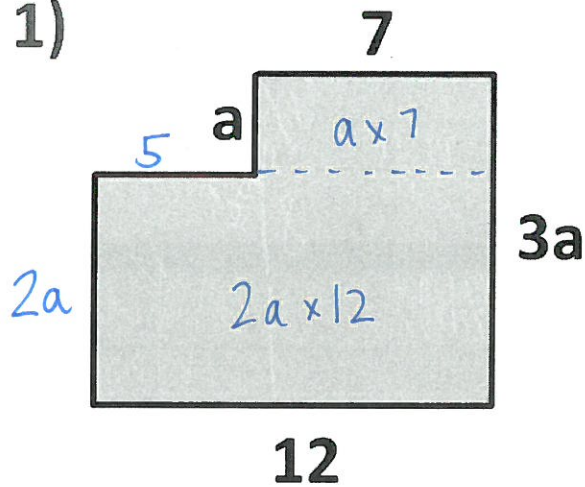


Using Area and Perimeter to Understand Equivalent Expressions

1)



$$P = 5 + a + 7 + 3a + 12 + 2a$$

$$P = 6a + 24$$

$$P = 6(a + 4)$$

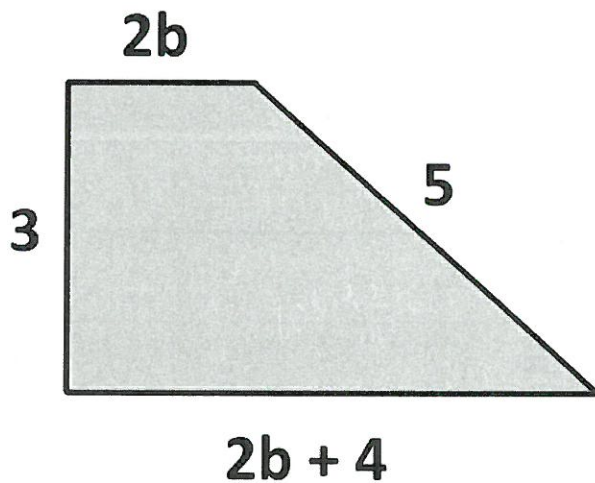
$$P = 3a + a + a + a + (6 \times 2)$$

$$A = (a \cdot 7) + (2a \cdot 12)$$

$$A = 7a + 24a$$

$$A = 31a$$

2)



$$P = 2b + 5 + 2b + 4 + 3$$

$$P = 4b + 12$$

$$P = 4(b + 3)$$

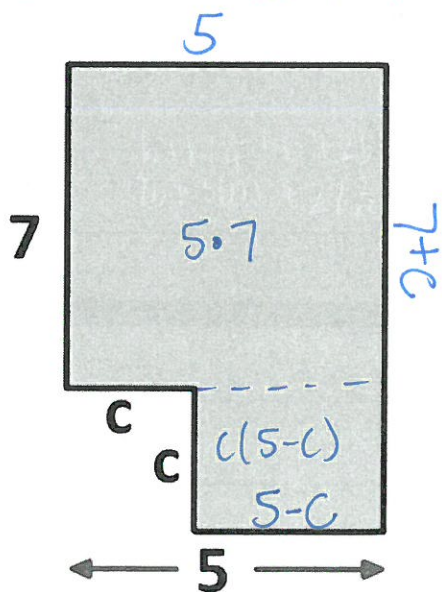
$$P = (8b + 24) \div 2$$

$$P = 7b - 3b + 20 - 8$$

$$P = b + b + b + b + 2 + 2 + 2 + 2 + 2 + 2$$

$$P = 2b + b + b + \frac{3b}{3}$$

3)



$$P = 5 + 7 + c + 5 - c + c + c + 7$$

$$P = 2c + 12$$

$$P = 2(c + 6)$$

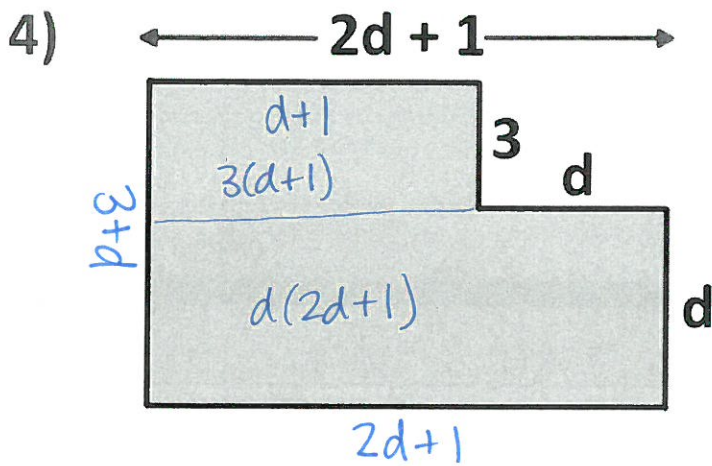
$$P = (6c + 36) \div 3$$

$$A = (5 \cdot 7) + c(5 - c)$$

$$A = 35 + 5c - c^2$$

$$A = 7(5 + c) - c^2$$

$$c \begin{array}{|c|c|} \hline 5-c & \\ \hline 5c & c^2 \\ \hline \end{array}$$



$$P = d+1+3+d+d+2d+1+3+d$$

$$P = \del{6d+8} 6d+8$$

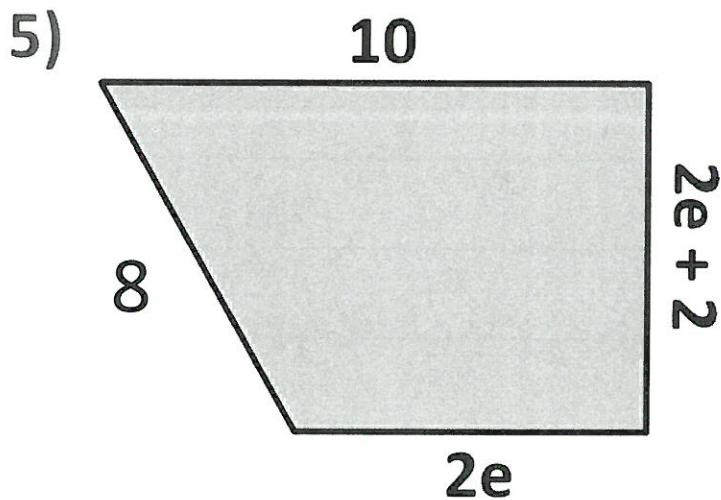
$$P = 2(3d+4)$$

$$P = (24d+32):4$$

$$A = 3(d+1) + d(2d+1)$$

$$A = 3d+3 + 2d^2+d$$

$$A = 2d^2 + 5d + 3$$



$$P = 10+2e+2+2e+8$$

$$P = 4e+20$$

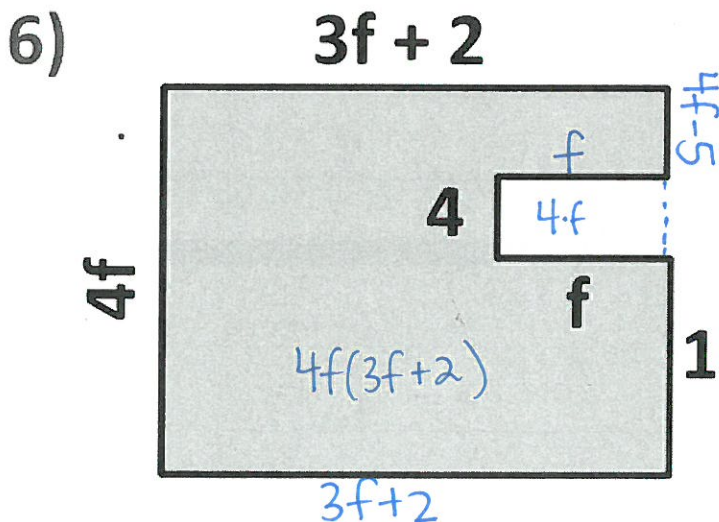
$$P = 4(e+5)$$

$$P = 2(2e+10)$$

$$P = 11e-8e+e+100-80$$

$$P = 32e:8e+100:4$$

$$P = \frac{8e+40}{2}$$



$$P = 3f+2+4f-5+f+4+f+1+3f+2+4f$$

$$P = 16f-4$$

$$P = (4^2 \cdot f) + (3 \times 3) - \frac{25}{5}$$

$$P = 4(f-1)$$

$$A = 4f(3f+2) - (4 \cdot f)$$

$$A = 12f^2 + 8f - 4f$$

$$A = 12f^2 + 4f$$

$$4f(3f+1)$$