

$$y = f(x)$$

$$f(-4) = 0$$

$$f(2) = 0$$

$$f(0) = 16$$

$$y = (x+1)^2 + 15$$

$$y = (x+1)(x-2) + k$$

$$= x^2 - 2x - 8 + k$$

$$= (x+1)^2 - 9$$

$$y = ax^2 + bx + 16$$

$$0 = 16a - 4b + 16$$

$$0 = 4a + 2b + 16$$

$$y \log_5 x^2 = \frac{25}{x^3}$$

$$\log_5 x \log_5 x^2 = \log_5 \left(\frac{25}{x^3} \right)$$

$$a = \log_5 x \quad (2 \log_5 x \times (\log_5 x)) = 2 - 3 \log_5 x$$

$$2a^2 + 3a - 2 = 0$$

$$(2a-1)(a+2) = 0$$

$$a = \frac{1}{2}, -2 \quad \log_5 x = \frac{1}{2} - 2$$

$$x = \sqrt{5}, \frac{1}{25}$$

$$16a - 4b = -16$$

$$4a + 2b = -16 - 32$$

$$24a = -48$$

$$a = -2$$

$$b = -4$$

3

45

7

375

$$10 \times 2 - 6 = 14$$

$$14 \times 2 - 9 = 19$$

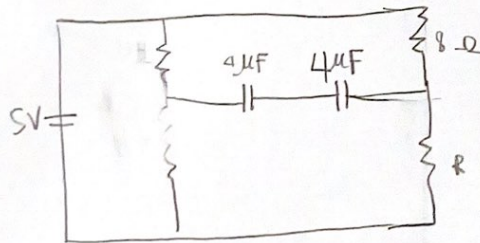
$$19 \times 2 - 11 = 27$$

$$27 \times 2 - 10 = 54 \quad 54 \times 2 - 10 = 108$$

$$y = -2x^2 - 4x + 16$$

$$= -2(x^2 - 2x) + 16$$

$$= -2(x-1)^2 + 18$$



$$Q = CV$$

$$f(x) = 3x + 17 \quad (f \circ g)'(x) = 3x^2 + 1$$

$$g(0) = 1 \quad \int_0^1 g(x) dx =$$

$$f(g(x)) = x^3 + x + C \quad g(0) = 1 \Rightarrow C = 4$$

$$f(x) = 3x + 17$$

$$3g(x) + 1 = x^3 + x + 4$$

$$\int_0^1 g(x) dx = \frac{1}{3} \left[\left(\frac{1}{4} + \frac{1}{2} + 3 \right) - 0 \right]$$

$$6 = \frac{5}{4}$$

$$\frac{1}{2} \times 180 \times 12$$

$$\frac{1080}{12}$$

$$\frac{720}{120}$$

$$n(A \cap B) = x$$

$$n(A) = 4x$$

$$n(B) = 8x$$

$$(4x - x) + (8x - x) = 120$$

$$3x + 7x = 120$$

$$x = 12$$

$$n(A \cup B) = 120 + 12$$