

Functions

Workout

Question 1:

- (a) 11 (b) 29 (c) 5 (d) -1

Question 2:

- (a) 5.25 (b) 1.75 (c) 2.25 (d) -2.75

Question 3:

- (a) 44 (b) -4 (c) 4 (d) 220

Question 4: $x = 5$

Question 5: $x = -3$

Question 6: $x = 13$

Question 7: $x = 6$ or $x = -4$

Question 8:

- (a) 7 (b) -11 (c) 26 (d) 14
(e) 12 (f) 6 (g) 86 (h) -22

Question 9:

- (a) 8 (b) 8 (c) 7 (d) 25
(e) 16 (f) 71 (g) 4 (h) 2.5

Question 10:

- (a) 8 (b) 16 (c) 2000 (d) -0.8
(e) 0.5 (f) 8192 (g) 2.3 (h) 2.4

Question 11:

- (a) $2x - 9$ (b) $2x - 4$ (c) $4x + 3$ (d) $x - 10$

Question 12:

- (a) $8x + 21$ (b) $8x$ (c) $16x^2 - 24x + 9$ (d) $4x^2 - 3$

(e) $4x^2 + 24x + 36$ (f) $2x^2 + 6$ (g) $8x^2 + 21$ (h) $64x^2$

Question 13:

(a) $f^{-1}(x) = \frac{x}{2}$ (b) $f^{-1}(x) = x + 6$ (c) $f^{-1}(x) = 3x$

(d) $f^{-1}(x) = \frac{x - 1}{5}$

(e) $f^{-1}(x) = \frac{7x}{2}$ (f) $f^{-1}(x) = 6x + 2$

Question 14:

(a) $h^{-1}(x) = 4x$ (b) 6

Question 15:

(a) $f^{-1}(x) = \frac{x + 3}{2}$ (b) 5

Question 16:

(a) $g^{-1}(x) = \frac{2x - 1}{3}$ (b) 7

Question 17:

(a) $f^{-1}(x) = \frac{9x + 72}{4}$ (b) -4.5

Apply

Question 1: $a = -12.5$

Question 2: $a = -3$ and $a = 4$

Question 3: $a = 1$ and $a = -4$

Question 4:

(a) $x^2 + 8x + 11$ (b) $x^2 + 2x - 4$ (c) $4x^2 + 8x - 1$ (d) $9x^2 + 12x - 1$

(e) $4x^2 + 4x - 4$ (f) $16x^2 + 40x + 20$

Question 5: $k = 5$

Question 6: $k = -3$

Question 7: $x = 2.5$

Question 8:

$$f(x + 1) - f(x) = [(x + 1)^2 + 3(x + 1) + 8] - [x^2 + 3x + 8]$$

$$f(x + 1) - f(x) = [x^2 + 2x + 1 + 3x + 3 + 8] - [x^2 + 3x + 8]$$

$$f(x + 1) - f(x) = [x^2 + 5x + 12] - [x^2 + 3x + 8]$$

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