

Answers are on the back.

1. Graph the following points on a coordinate plane:

$$(0, 5) \quad (-3, -2) \quad (4, 2) \quad (-3, 0) \quad (1, -6) \quad (-2, 5) \quad (0, -2)$$

2. What is the distance from $(-3, 5)$ to the x -axis?
3. What is the distance from $(6, 3)$ to the y -axis?
4. If you start at $(2, 7)$ and go left six units, where are you?
5. If you start at $(4, -7)$ and go up five units, where are you?
6. If you start at $(5, -3)$, go up six units, right three units and then down two units, where are you?
7. If you start at $(-3, 1)$, go down four units and left two units, where are you?
8. Let h be the function which takes input x , multiplies the input by 10, then subtracts 15. Write the formula for h , and compute $h(6)$.
9. Let f be the function defined by $f(x) = 2x - 3$. Compute each of the following quantities:

(a) $f(1)$	(e) $f(1) + f(-2)$	(i) $f(2)4$
(b) $f(-3)$	(f) $f(1) - 2$	(j) $4f(2)$
(c) $f(1 - 2)$	(g) $1 - f(2)$	(k) $f(2 \cdot 4)$
(d) $f(1) - f(2)$	(h) $2f(4)$	(l) $2f(3) - 5f(1)$

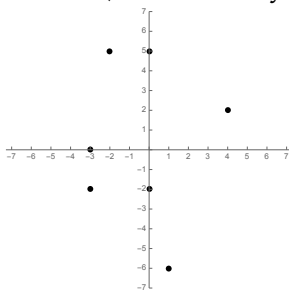
10. Let g be the function defined by $g(x) = x^2 - x$. Compute each of the following quantities:

(a) $g(3)$	(c) $2g(3)$	(e) $g(-2) + 4$
(b) $g(2 \cdot 3)$	(d) $g(-2 + 4)$	(f) $g(-2 \cdot 5) - 20$

11. Let dog be the function defined by the following procedure: if the input x is odd, then $\text{dog } x = x + 1$. If the input x is even, then $\text{dog } x = x - 1$. Compute each of the following quantities:

(a) $\text{dog } 3$	(g) $\text{dog } 7 + \text{dog } 3$	(m) $\text{dog } (5) \cdot 3$
(b) $\text{dog } 4$	(h) $\text{dog } (7) + \text{dog } 3$	(n) $3 \text{ dog } 5$
(c) $\text{dog } (7 + 3)$	(i) $\text{dog } (7) + \text{dog } (3)$	(o) $\text{dog } 4^2$
(d) $\text{dog } 7 + 3$	(j) $7 + 3$	(p) $\text{dog } (4)^2$
(e) $\text{dog } (7) + 3$	(k) $\text{dog } 5 \cdot 3$	(q) $\text{dog } (4^2)$
(f) $3 + \text{dog } 7$	(l) $\text{dog } (5 \cdot 3)$	(r) $(\text{dog } 4)^2$

Answers (I did these by hand; it is possible that they contain errors)



1.

2. 5 units

3. 6 units

4. $(-4, 7)$ 5. $(4, -2)$ 6. $(8, 1)$ 7. $(-5, -3)$ 8. $h(x) = 10x - 15; h(6) = 45.$ 9. (a) $f(1) = -1$ (b) $f(-3) = -9$ (c) $f(1 - 2) = f(-1) = -5$ (d) $f(1) - f(2) = -1 - 1 = -2$ (e) $f(1) + f(-2) = -1 + (-7) = -8$ (f) $f(1) - 2 = -1 - 2 = -3$ (g) $1 - f(2) = 1 - 1 = 0$ (h) $2f(4) = 2(5) = 10$ (i) $f(2)4 = 1 \cdot 4 = 4$ (j) $4f(2) = 4 \cdot 1 = 4$ (k) $f(2 \cdot 4) = f(8) = 13$ (l) $2f(3) - 5f(1) = 2(3) - 5(-1) = 11$ 10. (a) $g(3) = 6$ (b) $g(2 \cdot 3) = g(6) = 30$ (c) $2g(3) = 2(6) = 12$ (d) $g(-2 + 4) = g(2) = 2$ (e) $g(-2) + 4 = 6 + 4 = 10$ (f) $g(-2 \cdot 5) - 20 = g(-10) - 20 = 110 - 20 = 90$ 11. (a) $\text{dog } 3 = 4$ (b) $\text{dog } 4 = 3$ (c) $\text{dog } (7 + 3) = \text{dog } 10 = 9$ (d) $\text{dog } 7 + 3 = 8 + 3 = 11$ (e) $\text{dog } (7) + 3 = 8 + 3 = 11$ (f) $3 + \text{dog } 7 = 3 + 8 = 11$ (g) $\text{dog } 7 + \text{dog } 3 = 8 + 4 = 12$ (h) $\text{dog } (7) + \text{dog } 3 = 8 + 4 = 12$ (i) $\text{dog } (7) + \text{dog } (3) = 8 + 4 = 12$ (j) $7 + 3 = 10$ (k) $\text{dog } 5 \cdot 3 = \text{dog } 15 = 16$ (l) $\text{dog } (5 \cdot 3) = \text{dog } 15 = 16$ (m) $\text{dog } (5) \cdot 3 = 6 \cdot 3 = 18$ (n) $3 \text{ dog } 5 = 3 \cdot 6 = 18$ (o) $\text{dog } 4^2 = \text{dog } 4 \cdot 4 = \text{dog } 16 = 15$ (p) $\text{dog } (4)^2 = \text{dog } 16 = 15$ (q) $\text{dog } (4^2) = \text{dog } 16 = 15$ (r) $(\text{dog } 4)^2 = 3^2 = 9$