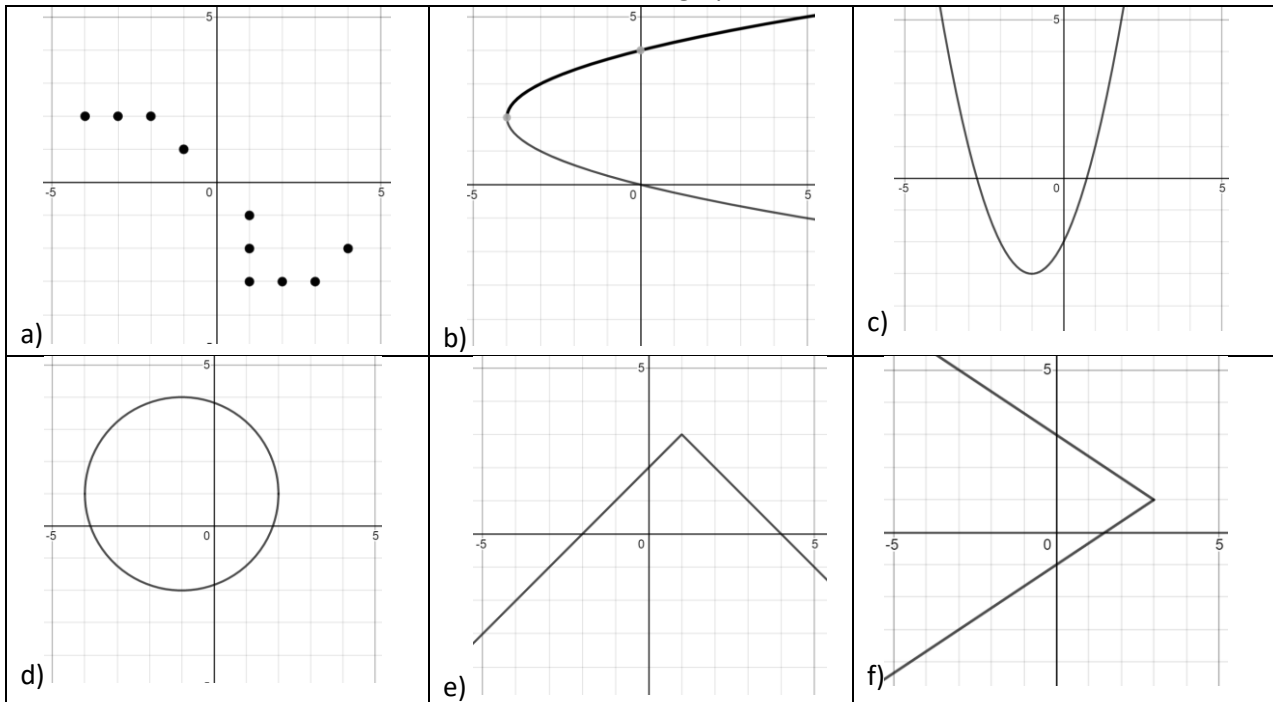


1. Use a ruler and the vertical line test to determine which graphs are functions.



2. Let $x = -6$ to explain why $y = x^2 - 5x$ is a function but $x = y^2 - 5y$ is not.

3. Evaluate $f(x) = 2 - 3x$, given

a. $f(2)$

b. $f(0)$

c. $f(-4)$

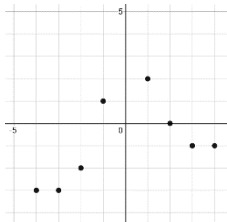
d. $f\left(\frac{1}{2}\right)$

e. $f(a)$

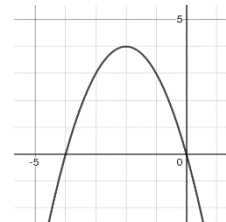
f. $f(3b)$

4. The graphs of $y = f(x)$ and $y = g(x)$ are shown. Using the graphs, evaluate:

$y = f(x)$:



$y = g(x)$:



a. $f(1)$

b. $g(-2)$

c. $f(4) - g(-2)$

d. x when $f(x) = -3$

5. Evaluate $f(-1)$ for:

a. $f(x) = (x - 2)^2 - 1$

b. $f(x) = 2 + 3x - 4x^2$

6. For $f(x) = \frac{1}{2x}$, determine:

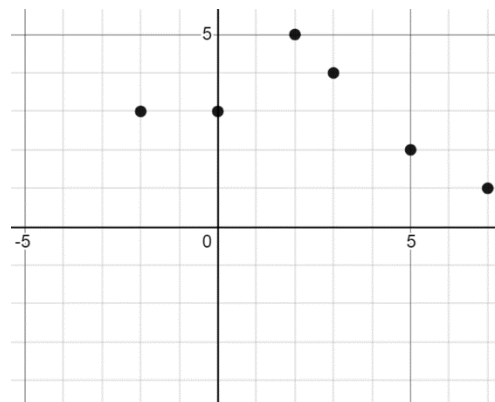
a. $f(0)$

b. $f\left(\frac{1}{4}\right) + f\left(\frac{3}{4}\right)$

7. The graph of $y = f(x)$ is shown at the right.

- a. State the domain and range of $f(x)$
- b. Evaluate

- i. $f(3)$
- ii. $f(5)$
- iii. $f(5 - 3)$
- iv. $f(5) - f(3)$



8. For $h(x) = 2x - 5$, determine:

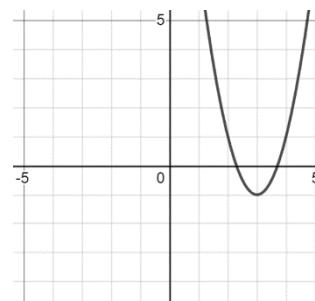
- i. $h(a)$
- ii. $h(b + 1)$
- iii. $h(3c - 1)$
- iv. $h(2 - 5x)$

9. Consider the function $g(t) = 3t + 5$, determine:

- i. $g(1) - g(0)$
- ii. $g(2) - g(1)$
- iii. $g(1001) - g(1000)$
- iv. $g(a + 1) - g(a)$

10. The graph at the right shows $f(x) = 2(x - 3)^2 - 1$

- a. Evaluate $f(-2)$
- b. What does $f(-2)$ represent on the graph of f ?
- c. State the domain and range of the relation.
- d. How do you know that f is a function from its graph?



11. For $g(x) = 4 - 5x$, determine the input for x when the output of $g(x)$ is:

- a. -6
- b. $\frac{3}{5}$

12. Given $f(x) = 3(x - 1)^2 - 4$, determine:

- i. $f(2) - f(1)$
- ii. $2f(3) - 7$
- iii. $f(1 - x)$

13. Given $f(x) = x^2 + 2x - 15$, determine the values of x for which:

- a. $f(x) = 0$
- b. $f(x) = -16$

14. Let $f(x) = 3x + 1$ and $g(x) = 2 - x$. Determine values for a such that

- a. $f(a) = g(a)$
- b. $f(a^2) = g(2a)$

Answers:

- 1a)no b)no c)yes d)no e)yes f)no, 2) with the quadratic one solution is produced and with the circle 2 solutions are produced 3a)-4, b)2 c)14 d)1/2 e)2-3a f)2-9b 4a)2 b)4 c)-5 d) -3 or -4 5a)8 b)-5 6a)undefined b)2 2/3 7a) D{-2,0,2,3,5,7} R{1,2,3,4,5} b)i) 4 ii) 2 iii) 5 iv) -2 8a) 2a-5 b) 2b-3 c) 6c-7 d) -10x-1 9i)3 ii)3 iii)3 iv)3 10a)49 b) the y value when x=-2 c) D{x∈R} R{y>=-1} d) it passes the VLT 11a)2 b)17/25 12i)3 ii)9 iii)3x²-4 13a) 3,-5 b) -1 14a) 1/4 b)1/3,-1