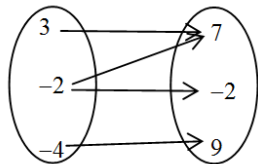


1. Determine if the following are functions. State the domain and range for each.

a.

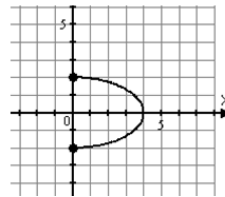


Function (Y or N):

Domain:

Range:

b.

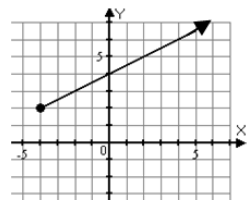


Function (Y or N):

Domain:

Range:

c.



Function (Y or N):

Domain:

Range:

d.

$$\{(6, -3), (7, 4), (-7, -2), (0, -2)\}$$

Function (Y or N):

Domain:

Range:

2. Given the following functions, find each value.

$$f(x) = x^2 + 1 \quad g(x) = 6 - 3x \quad h(x) = x - 1 \quad j(x) = -2x^3 \quad k(x) = 2 - \frac{1}{3}x$$

a. $j(f(-3))$

b. $f(h(x))$

c. $f^{-1}(x)$

d. Use compositions to prove that $g(x)$ and $k(x)$ are inverses.

3. State the transformations that occur for each of the following functions. Then sketch a graph.

a. $y = 4(x - 2)^2 - 5$

b. $y = \sqrt{x + 5} + 1$

c. $y = -\frac{3}{5}|x + 3| + 8$

Transformation(s):

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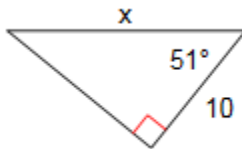
Transformation(s):

4. Solve. $\frac{-x^2+3}{x^2-3x-28} + \frac{2x}{x+4} = \frac{-10}{x^2-3x-28}$

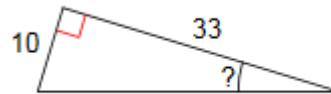
5. Solve. $\log_2(x + 4) + \log_2(x - 2) = 4$

6. Solve for the missing side or angle. Round side lengths to the tenths place and angles to the whole degree.

a.



b.



7. Find the exact value.

a. $\sin\left(\frac{9\pi}{4}\right)$

b. $\cos\left(-\frac{17\pi}{6}\right)$

c. $\cot(5\pi)$

d. $\csc\left(\frac{11\pi}{3}\right)$