

Foundation for Function (Chapter 1) Study Guide

Name: _____

Period _____

Directions: Simplify each expression so that the exponents are positive.

1. $\frac{24a^3bc^5}{6ab^4c^2}$

2. $(3d^3e^2)^4$

3. $(-3f^{-4}gh^3)(4f^2g^6h^{-1})$

4. $\frac{(2m^3n^2)^3}{20m^5n^8}$

5. $(-p^{-3}q^2r^3)^2(4p^{-4}r^2)$

6. $\frac{(2t^3u^5)^3}{(4tu^3v)^2}$

7. $(3w^2x^{-2}y)^4(5xy^4)^0$

8. $\left(\frac{18a^7b^{-3}}{24a^3b^2}\right)^2$

$$9. \left(\frac{(c^{-3}d^2e)(c^2d^3)}{c^4de^3} \right)^4$$

$$10. \left(\frac{(9f^2g^3)(6fg^{-2})}{(3f^3g^2)^2} \right)^{-2}$$

11. Which expressions simplify to $\frac{x^4y^3}{z}$? **There may be multiple answers.**

a. $\frac{(x^5y^{-2}z)(x^2y^7z^{-5})}{x^3y^2z^{-6}}$

b. $\frac{x^7y^9z^9}{(x^2y^3z^{-5})^2}$

c. $(x^2y^5z^3)^3(xy^6z^{-5})^{-2}$

d. $\frac{(x^6y^9z^3)(x^4y^{-3}z^{-6})}{(x^3y^2z^{-2})^2}$

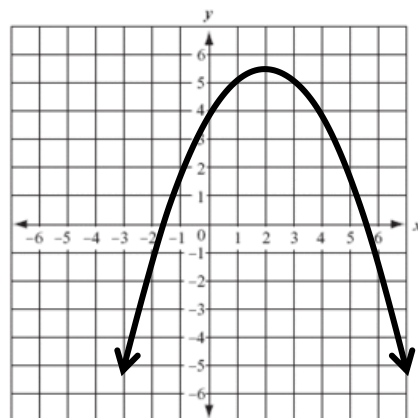
12. Which numbers would be an element of the range in this function? **There may be multiple answers.**

a. 3

b. 4

c. 5

d. 6



Directions: Find the all elements of the domain and range for each number relationship. Then determine if each number relationship is a function or not.

13. $(5, 4), (3, -5), (2, -4), (6, 5)$

13. D:

R:

Function?

14.

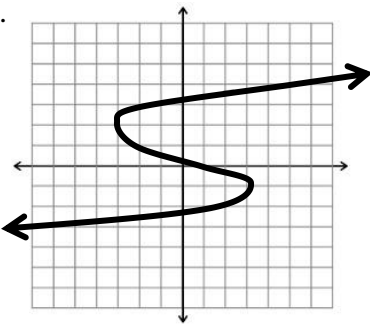
x	y
-2	8
-1	6
0	4
1	2
2	0
2	-2

14. D:

R:

Function?

15.

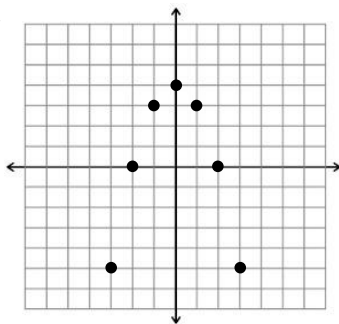


15. D:

R:

Function?

16.



16. D:

R:

Function?

17.

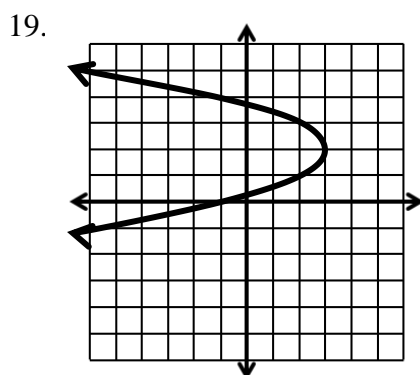
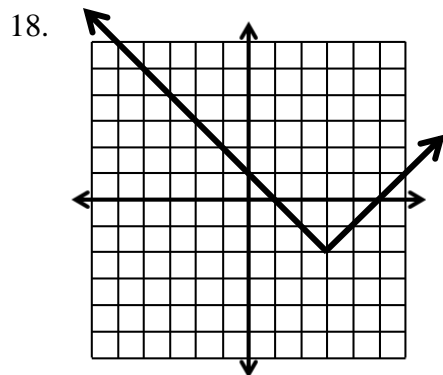
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17. D:

R:

Function?

Directions: State the domain and range for each number relationship in **set notation** and **interval notation**.



Directions: Evaluate each function at the given domain value.

20. $f(x) = 4x - 1$; find $f(-6)$

21. $g(x) = x^2 + 3x - 4$; find $g(-5)$

22. $k(t) = \sqrt{7t + 2} - 5$; find $k(2)$

23. $h(t) = t^3 + 2t - 3$; find $h(3)$

Directions: Use the graphs below to evaluate each function at the given domain value.

24. $f(-7) =$

25. $f(-3) =$

26. $f(12) =$

