

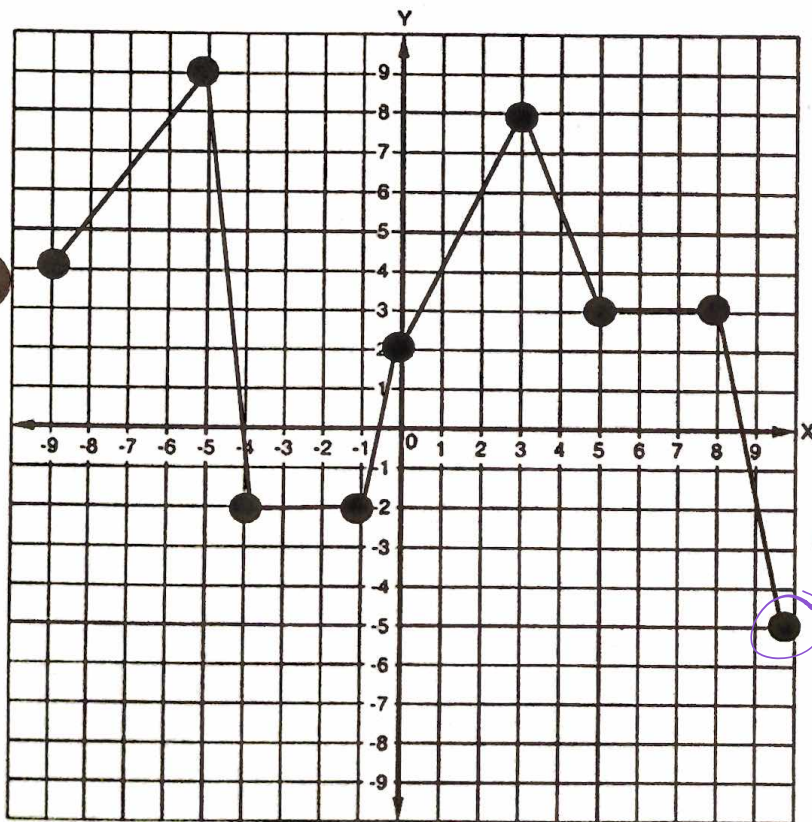
Key

Unit 5- Review Functions and Radicals (DAY 1) HW

1. Given $f(x) = 6x + 5$ and $g(x) = 2x^2 - 4x + 1$, evaluate each of the following:

<p>a) $f(-3)$</p> <p>$f(x) = 6x + 5$</p> <p>$f(-3) = 6(-3) + 5$</p> <p>$f(-3) = -13$</p>	<p>b) $f(\frac{1}{3})$</p> <p>$f(x) = 6x + 5$</p> <p>$f(\frac{1}{3}) = 6(\frac{1}{3}) + 5$</p> <p>$f(\frac{1}{3}) = 7$</p>	<p>c) $g(0)$</p> <p>$g(x) = 2x^2 - 4x + 1$</p> <p>$g(0) = 2(0)^2 - 4(0) + 1$</p> <p>$g(0) = 0 - 0 + 1$</p> <p>$g(0) = 1$</p>	<p>d) $g(-2)$</p> <p>$g(x) = 2x^2 - 4x + 1$</p> <p>$g(-2) = 2(-2)^2 - 4(-2) + 1$</p> <p>$g(-2) = 8 + 8 + 1$</p> <p>$g(-2) = 17$</p>
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Using the graph below, answer the following questions



- 3) Relative min: -2, -5
- 4) Relative Max: 8, 9
- 5) Absolute Min: -5
- 6) Absolute Max: 9
- 7) Domain: [-9, 10]
- 8) Range: [-5, 9]
- 9) $f(0)$: 2 10) $f(5)$: 3
- 11) $f(-4)$: -2 12) $f(-5)$: 9
- 13) $f(-9)$: 4 14) $f(10)$: -5

Find x.

- 15) $f(x) = 9$ $x = -5$ 16) $f(x) = -5$ $x = 10$
- 17) $f(x) = 3$ $x = -4, 3, 5, 8$ (4 answers)

[5, 8]

Identify the intervals over which $f(x)$ are:

- 18) Increasing: $(-9, -5), (-1, 3)$
- 19) Decreasing: $(-5, -4), (3, 5), (8, 10)$
- 20) Constant: $(-4, -1), (5, 8)$

(Simplify)

$$\sqrt{720x^3y^2z} = \sqrt{2 \cdot 2 \cdot 2 \cdot 2 \cdot 3 \cdot 3 \cdot 5 \cdot x \cdot x \cdot x \cdot y \cdot y \cdot z} =$$

Example:

$$\sqrt{\underbrace{2 \cdot 2} \cdot \underbrace{2 \cdot 2} \cdot \underbrace{3 \cdot 3} \cdot 5 \cdot \underbrace{x \cdot x} \cdot x \cdot \underbrace{y \cdot y} \cdot z} = \text{* look for pairs !!}$$

$$2 \cdot 2 \cdot 3 \cdot x \cdot y \sqrt{5xz} = 12xy\sqrt{5xz}$$

Simplify. SHOW WORK!!!!!!

21) $\sqrt{54}$

$$\sqrt{9 \cdot 6}$$

$$3\sqrt{6}$$

22) $3\sqrt{125}$

$$3 \cdot \sqrt{25 \cdot 5}$$

$$3 \cdot 5\sqrt{5}$$

$$15\sqrt{5}$$

23) $-2\sqrt{90}$

$$-2\sqrt{9 \cdot 10}$$

$$-2 \cdot 3\sqrt{10}$$

$$-6\sqrt{10}$$

24) $\frac{1}{2}\sqrt{24}$

$$\frac{1}{2} \cdot \sqrt{4 \cdot 6}$$

$$\frac{1}{2} \cdot 2\sqrt{6}$$

$$\sqrt{6}$$

25) $\sqrt{48}$

$$\sqrt{16 \cdot 3}$$

$$4\sqrt{3}$$

26) $\sqrt{490}$

$$\sqrt{49 \cdot 10}$$

$$7\sqrt{10}$$

27) $\sqrt{32x^2}$

$$\sqrt{16 \cdot 2 \cdot x \cdot x}$$

$$4x\sqrt{2}$$

28) $\sqrt{16x^2y^4z^6}$

$$\sqrt{16 \cdot x \cdot x \cdot y \cdot y \cdot y \cdot y \cdot z \cdot z \cdot z \cdot z \cdot z \cdot z}$$

$$4|x|y^2z^3$$

29) $\sqrt{25x}$

$$5\sqrt{x}$$

30) $-2\sqrt{45x^4y^3}$

$$-2\sqrt{9 \cdot 5 \cdot x \cdot x \cdot x \cdot x \cdot y \cdot y \cdot y}$$

$$-2 \cdot 3 \cdot x^2 \cdot y \sqrt{5y}$$

$$-6x^2y\sqrt{5y}$$

31) $5\sqrt{27x^3y^5}$

$$5\sqrt{9 \cdot 3 \cdot x \cdot x \cdot x \cdot y \cdot y \cdot y \cdot y \cdot y}$$

$$5 \cdot 3 \cdot y^2 \sqrt{3xy}$$

$$15y^2\sqrt{3xy}$$

.....32) $\sqrt[3]{216}$

$$\sqrt[3]{27 \cdot 8}$$

$$\sqrt[3]{3 \cdot 3 \cdot 3 \cdot 2 \cdot 2 \cdot 2}$$

$$3 \cdot 2$$

$$6$$