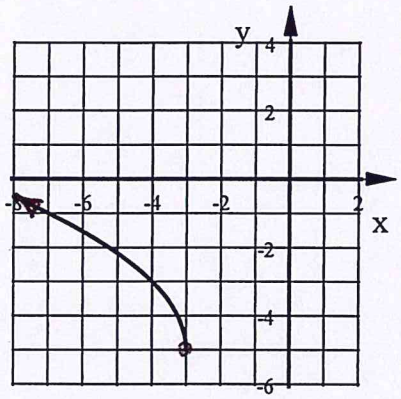
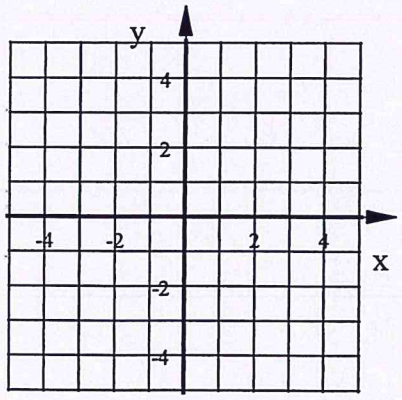
Bellwork Alg 2 Friday, February 14, 2020

1. Simplify. Write answer in simplified radical form. $\left(\frac{9a^{-3}b^{5}}{a^{-13}c^{\frac{-7}{6}}}\right)^{\frac{-3}{2}}$

2. Write the equation of the square root function shown below.



3. Graph this square root function using three pts: $y = -3\sqrt{-(x-2)} + 5$



4. State the domain and range of this square root function: $f(x) = -6\sqrt{x+14} + 11$

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Answers

1. Simplify. Write answer in simplified radical form. $\left(\frac{9a^{-3}b^{5}}{a^{-13}c^{\frac{-7}{6}}}\right)^{\frac{-3}{2}}$

$= \left(9a^{10}b^{5}c^{\frac{7}{6}}\right)^{-3/2}$

↳ $\frac{a^{-3}}{a^{-13}} = a^{-3}\cdot a^{13} = a^{10}$

$= \left(\frac{1}{9a^{10}b^{5}c^{7/6}}\right)^{3/2} = \frac{1}{(\sqrt{9})^{3}a^{10\cdot 3/2}b^{5\cdot 3/2}c^{\frac{7}{6}\cdot\frac{3}{2}}}$

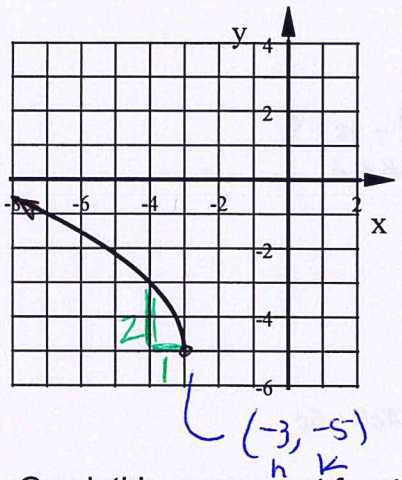
$= \frac{1}{27a^{15}b^{15/2}c^{7/4}}$

$c^{7/4} = \sqrt[4]{c^{7}} = c\sqrt[4]{c^{3}}$

$b^{15/2} = \sqrt{b^{15}} = b^{7}\sqrt{b}$

$$\frac{1}{27a^{15}b^{7}\sqrt{b}\,c\sqrt[4]{c^{3}}}$$

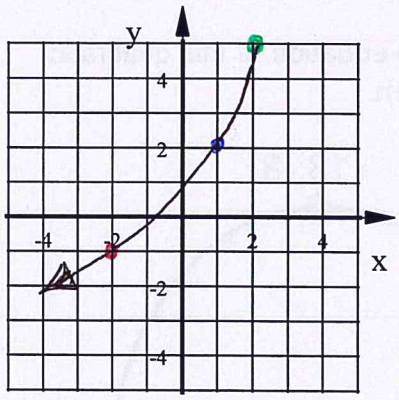
2. Write the equation of the square root function shown below.



- moved 3 left & 5 down
- backwards
- 2x taller

$$y = 2\sqrt{-(x+3)} - 5$$

3. Graph this square root function using three pts: $y = -3\sqrt{-(x-2)} + 5$



- upside down & backwards
- 3x taller
- moved 2 right & 5 up

1st pt parent $\frac{1}{1}$ → 1st pt this function $(-3, 1)$

2nd pt parent $\frac{1}{4}$ 2 → 2nd pt this function $(-6, 4)$

4. State the domain and range of this square root function: $f(x) = -6\sqrt{x+14} + 11$

Domain: $[-14, \infty)$

Range: $(-\infty, 11]$

- moved 14 left & 11 up
- upside down
- 6x taller