Math 2 Honors Name_____

Rational and Radical Quiz Review

Date_____

Simplify. Your answer should contain only positive exponents with no fractional exponents in the denominator.

1) $\dfrac{m^{3}n^{-4} \cdot m^{-2}n^{-\frac{5}{4}}}{\left(m^{\frac{2}{3}}\right)^{\frac{1}{2}}}$

2) $\dfrac{x^{2}y^{2}}{\left(x^{\frac{3}{2}}y^{-\frac{5}{3}}\right)^{-\frac{3}{4}} \cdot x^{2}y^{-\frac{3}{2}}}$

3) $\dfrac{m^{\frac{1}{2}}n^{2}}{\left(n^{\frac{4}{3}}\right)^{\frac{1}{2}} \cdot \left(m^{0}n^{-2}\right)^{2}}$

4) $\left(\dfrac{y^{-2}}{x^{\frac{4}{3}}y^{\frac{7}{4}} \cdot y^{-\frac{3}{2}}}\right)^{0}$

5) $\dfrac{\left(yx^{\frac{3}{2}}\right)^{-1} \cdot \left(y^{-\frac{1}{2}}\right)^{2}}{x^{-\frac{5}{4}}y^{-\frac{5}{4}}}$

6) $\dfrac{\left(x^{\frac{3}{4}}y^{-1}\right)^{\frac{1}{2}}}{\left(x^{-\frac{5}{3}}y^{-\frac{3}{2}} \cdot x^{\frac{3}{2}}\right)^{\frac{1}{2}}}$

Write each expression in exponential form.

7) $\dfrac{1}{\left(\sqrt[4]{10x}\right)^{7}}$

8) $\left(\sqrt[3]{4x}\right)^{4}$

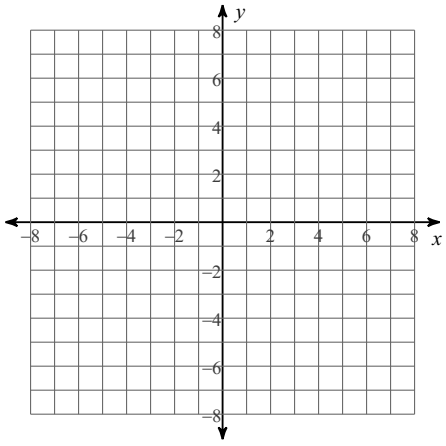
Write each expression in radical form.

9) $-2m^{\frac{4}{3}}$

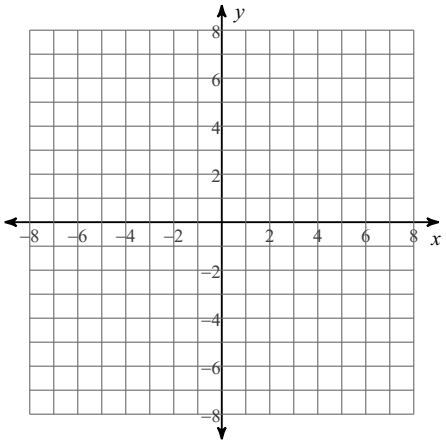
10) $(3r)^{-\frac{5}{2}}$

Identify the domain and range of each. Then sketch the graph.

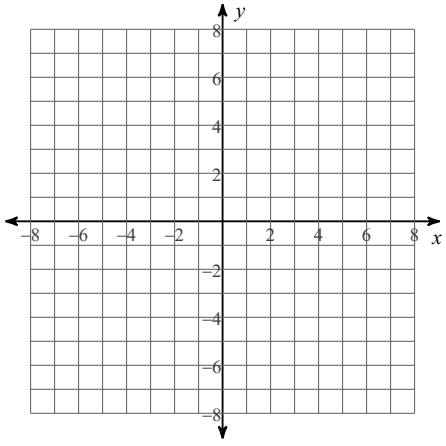
11) $y = 2\sqrt{x-2} - 4$



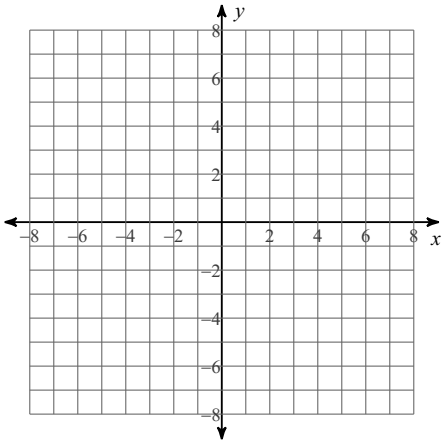
12) $y = \sqrt{x+2}$



13) $y = -5 + \sqrt{x}$



14) $y = -3 + \frac{1}{2}\sqrt{x+3}$



Solve each equation. Remember to check for extraneous solutions.

15) $-3 = -x + \sqrt{x-1}$

16) $6\sqrt{2p-9} = 18$

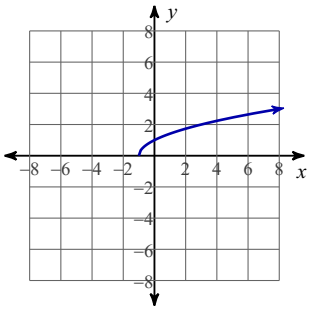
17) $2 + \sqrt{x+4} = 12$

18) $-b + \sqrt{4b-4} = -1$

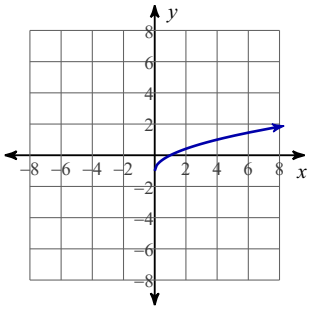
Match the given equation with the correct graph. Then, write the equation of each of the remaining functions. Assume there is no vertical stretch or compression.

19) $y = \sqrt{x - 1}$

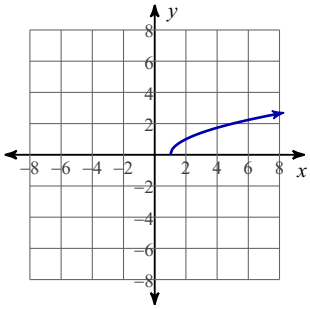
A)



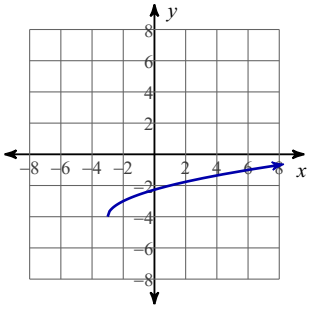
B)



C)

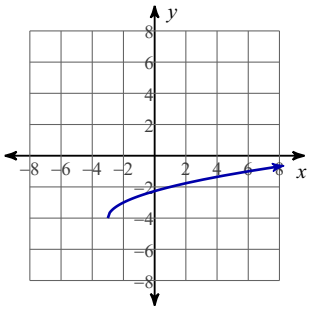


D)

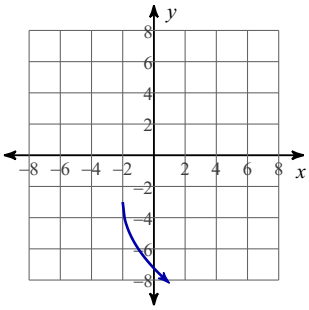


20) $y = \sqrt{x + 3} - 4$

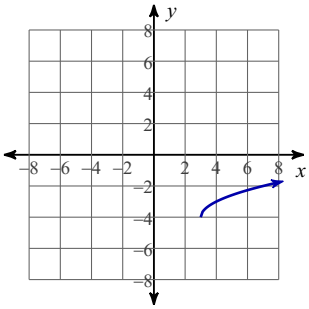
A)



B)



C)



D)