

Honors Math 2 – Review for Unit 3 Test

3.1 Simplify Rational (Fractional) Exponents and Radicals:

1) $81^{\frac{3}{4}}$

2) $64^{\frac{2}{3}}$

3) $8^{\frac{5}{3}}$

4) $x^3\sqrt{24x^3}\cdot\sqrt{6x^2}$

5) $\left(\frac{\sqrt[5]{a^4}}{\sqrt{b}}\right)^{-10}$

6) $(-4x^5y^7z^{-1})^2$

7) $\left(\frac{x^{-4}y^{-8}}{x^7y^{-3}}\right)^{-2}$

8) $x^{\frac{3}{5}}\cdot x^{\frac{1}{7}}$

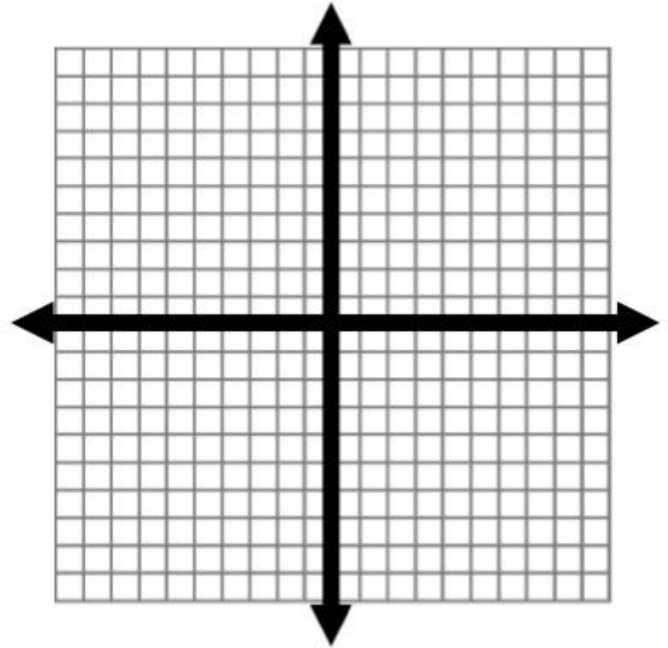
9) $x^{\frac{2}{3}}\cdot x^{\frac{-3}{4}}$

10) $\left(\frac{36x^{\frac{1}{12}}y^{-3}}{25x^{-\frac{1}{12}}y^8}\right)^{\frac{3}{2}}$

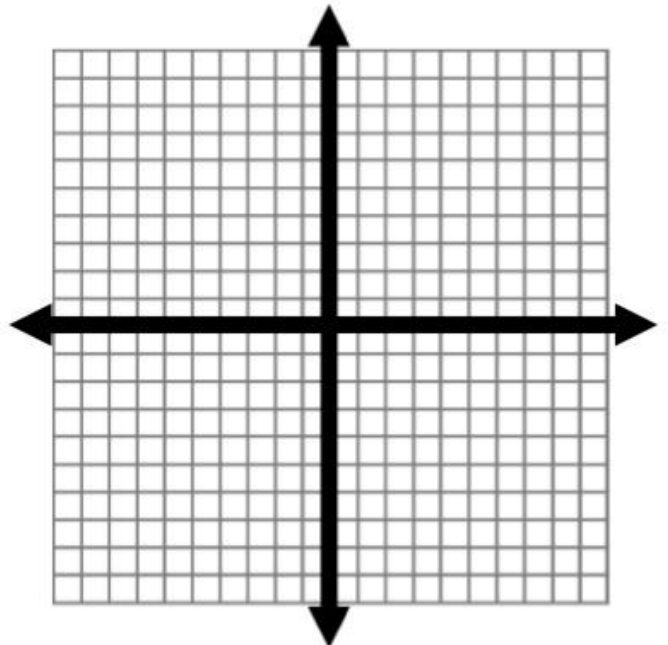
11) $\left(\frac{\sqrt[4]{16x^3}}{\sqrt{x^3}}\right)^8$

3.2 Graphing Radicals and Identifying Domain and Range:

- 1) Graph FRED $y = \sqrt{x}$ and the transformation of FRED $y = \sqrt{x+4} - 1$. Show 5 points in a table and state the Domain and Range.



- 2) Graph FRED $f(x) = \sqrt[3]{x}$ and the transformation of FRED $h(x) = -2\sqrt[3]{x+1} - 4$. Show 5 points in a table and state the Domain and Range.



3.3 Solving Radical Equations

Solve the following equations for x.

1) $145 = 5\sqrt{3x}$

2) $\sqrt{12x+13} = x$

3) $\sqrt[3]{x-7} = 5$

4) $\sqrt{5x+14} - x = 0$

5) $(x+2)^{\frac{3}{2}} + 2 = 66$

6) $\sqrt{2x-7} - x = -3$

3.4 Inverse Applications: Find the Inverse equation

1) $y = x^3 - 5$

2) $f(x) = \frac{1}{5}x + 8$

3.6 Write and Solve Inverse Variation Equations

- 1) Given table of values, complete the table and find the equation of inverse variation.

x	Y
2	15
3	
5	
6	

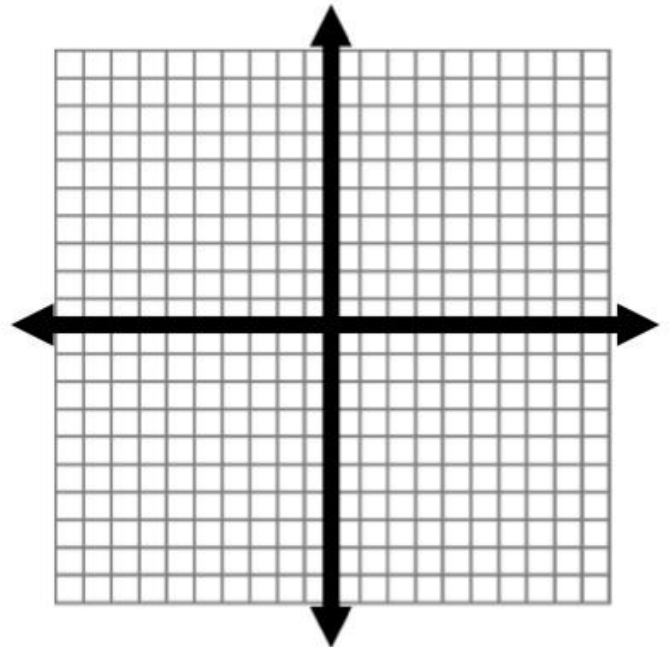
Write a general variation equation for the following scenarios.

- 2) Write an equation where x and y vary inversely.
- 3) Write an equation where y varies directly with x.
- 4) Write an equation where x varies jointly with y and z.

3.7 Graphing Inverse Variation Equations

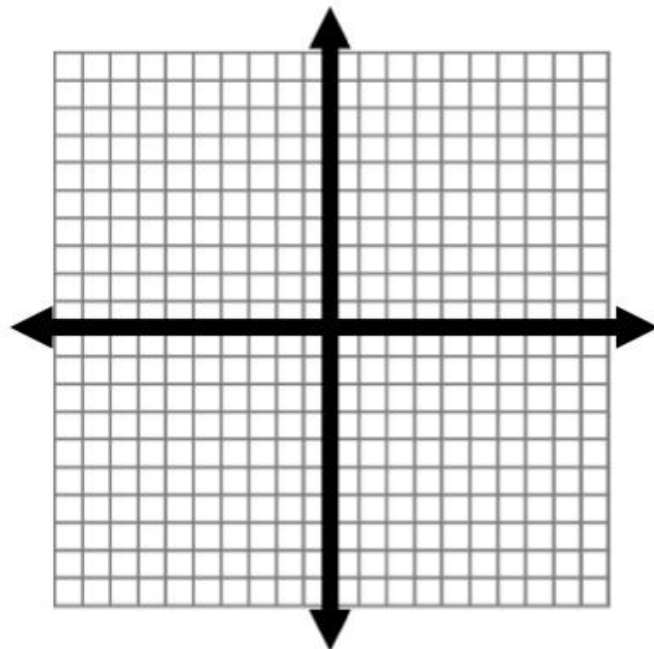
- 1) Graph $y = \frac{1}{x-4} - 5$.

Show and label asymptotes.
Show 4 points in a table.
State the Domain and Range.



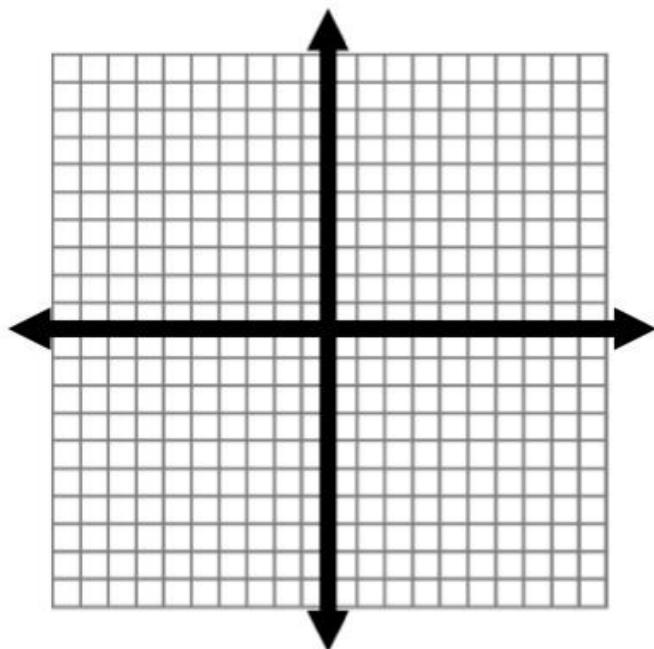
2) Graph $f(x) = \frac{1}{x+3} - 4$.

Show and label asymptotes.
Show 4 points in a table.
State the Domain and Range.



3) Graph $y = \frac{1}{x-1} + 2$.

Show and label asymptotes.
Show 4 points in a table.
State the Domain and Range.



3.7 Systems of Equations

Solve each system algebraically. Check with calculator.

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

2) $y = \sqrt{4x}$
 $3x - 3y = 9$