

Math 2 - Honors
 Unit 4 Radical & Rational Functions
 Test Review

Name _____
 Date: _____ PD: _____

➤ Write each expression in **simplest radical form**

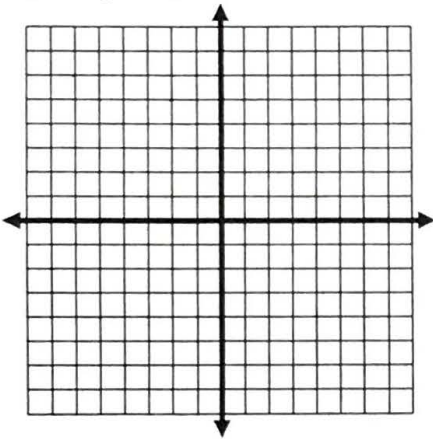
1. $7^{1/2}$	2. $x^{-2/3}$	3. $5y^{2/3}$	4. $(7x)^{1/4}$	5. $36^{-1/2}$
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➤ Write each expression in **exponential form**:

6. $\sqrt{5}$	7. $\sqrt[4]{2x}$	8. $\sqrt[3]{x^2}$	9. $3\sqrt[5]{x^3}$	10. $\frac{1}{\sqrt{11}}$
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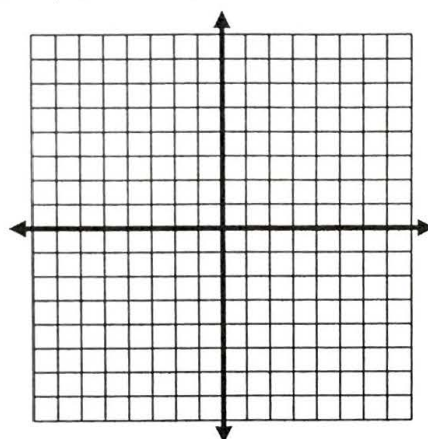
➤ Graph each function. Then state the Domain & Range.

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



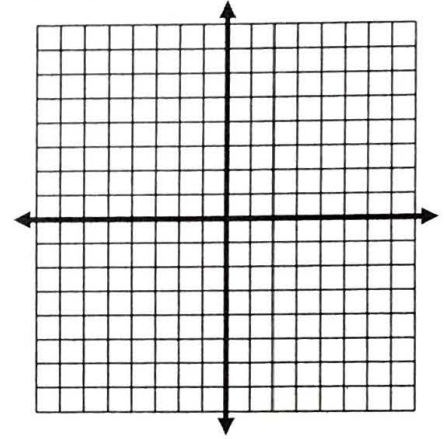
D: _____ R: _____

2) $f(x) = -\sqrt{x+2} - 4$



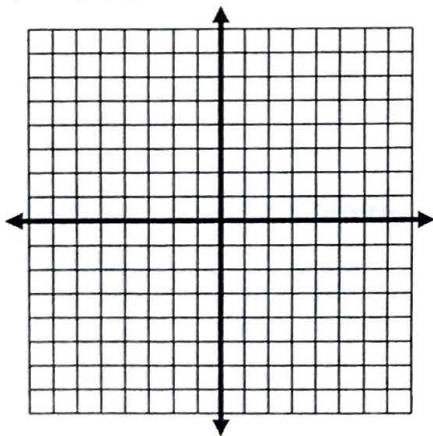
D: _____ R: _____

3) $y = \sqrt[3]{x} + 2$



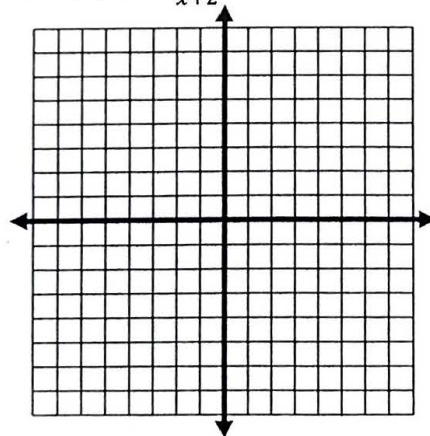
D: _____ R: _____

4) $f(x) = \sqrt[3]{x+1} + 2$



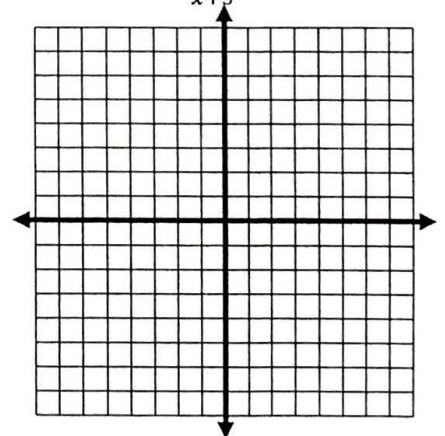
D: _____ R: _____

5) $f(x) = \frac{4}{x+2} - 3$



D: _____ R: _____

6) $f(x) = \frac{-1}{x+3} + 1$



D: _____ R: _____

7) Write the equation of a square root function that has been translated four units left and five units down and reflected across the x -axis.

8) Write the equation of a rational function that has a domain of $x \neq 2$ and a range of $y \neq -4$ with a vertical stretch of 9.

Solve each equation. Be sure to check for extraneous solutions!!

9) $\sqrt{x+10} - 7 = -5$	10) $\sqrt{-3x+40} = x$	11) $\sqrt{x+14} = x - 16$
12) $\frac{-2}{x+4} = \frac{4}{x+3}$	13) $\frac{x+4}{x-2} = \frac{x-5}{x-8}$	14) $\frac{5}{6x} + \frac{1}{x} = 4$
15) $\frac{2}{(x-1)(x+1)} - 1 = \frac{1}{x-1}$	16) Your distance from lightning <i>varies directly</i> with the time it takes you to hear thunder. If you hear thunder 10 <i>seconds</i> after you see lightning, you are about 2 <i>miles</i> from the lightning. About how many seconds would it take for thunder to travel a distance of 4 <i>miles</i> ?	17) The drama club is planning a bus trip to New York City. The cost per person <i>varies inversely</i> as the number of people going on the trip. It will cost \$30 per person if 44 <i>people</i> go on the trip. How much will it cost per person if 60 <i>people</i> go on the trip?
18) For a given interest rate, simple interest <i>varies jointly</i> as principal and time. If \$2000 left in an account for 4 <i>years</i> earns interest of \$320, how much interest would be earned in if you deposit \$5000 for 7 <i>years</i> ?	19) The volume of gas <i>varies directly</i> as the temperature and <i>inversely</i> as the pressure. If the volume is 230 <i>cubic centimeters</i> when the temperature is 300°K and the pressure is 20 <i>pounds</i> per square centimeter, what is the volume when the temperature is 270°K and the pressure is 30 <i>pounds</i> per square centimeter?	20) A. In a thunderstorm, the wind velocity in <i>meters per second</i> can be described by the function, $v(p) = 5.7\sqrt{998 - p}$ where p is the air pressure in millibars. What is the wind velocity if the air pressure is 437 <i>millibars</i> ? B. What is the air pressure of a thunderstorm in which the wind velocity is 49.3 <i>meters per second</i> ?