Name \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ **Unit 6 Test Review**

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| 1. The equation can be used to estimate the speed, *s*, of a car in miles per hour, given the length in feet, *x*, of the tire marks it leaves on the ground. A car traveling at a speed of 90 miles per hour came to a sudden stop. According to the equation, how long would the tire marks be for this car?
2. 355 feet
3. 380 feet
4. 405 feet
5. 430 feet
 | 1. Find the vertex of

$$y=(x-3)^{2}-2$$ |

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| 1. Find the domain and range, and increasing/decreasing intervals of each:
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| * 1. $y=\sqrt{x-2}+3$
 | * 1. $y= \frac{2}{x-4}-3$
 | * 1. $y= \frac{-4}{x+9}+1$
 |
| 1. Write an equation for the following
 | 1. Write an equation for the following graph.

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| 1. Write the equation of the square root function that is compressed vertically by a factor of 1/3, shifted up 9, and left 2.
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| 1. Write the equation of a reciprocal function (inverse variation) that is compressed vertically by a factor of 2/3, translated left 4 and down 6.
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| Find each of the following, using PROPER NOTATION:1. $y=2x^{2}+1$ Transformations: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
2. $y=-3\sqrt{x}$ Domain: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
3. $y=0.5\sqrt{x+2}-5$ End Behavior: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
4. $y=\frac{-2}{x}-3$ Increasing Interval: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
5. $y=\frac{10}{x+8}$ Range: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
6. $y=0.3\left(x-5\right)^{2}+2$ Vertex: \_\_\_\_\_\_\_\_\_\_\_\_\_
7. $y=\frac{5}{6x}-1$ Transformations: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
8. $y=-\sqrt{x+7}+3$ Decreasing Interval: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
9. $y=\sqrt{x}-5$ y-intercept: \_\_\_\_\_\_\_\_\_\_\_
10. $y=\frac{3}{4\left(x+1\right)}$ Transformations: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
11. $y=\frac{2}{x}+7$ Vertical Asymptote: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
12. $y=-\frac{1}{x+4}$ End Behavior: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
13. $y=\frac{-2}{x}-3$ Horizontal Asymptote: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
14. $y=.5\sqrt{x+1}-8$ Range: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
15. $y=0.3\left(x+1\right)^{2}-10$ Vertex: \_\_\_\_\_\_\_\_\_\_\_\_\_
16. $y=-\sqrt{x+2}-7$ Transformations: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
17. $y=\frac{1}{x+3}+8$ Decreasing Interval: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
18. $y=6\left(x-2\right)^{2}-8$ y-intercept: \_\_\_\_\_\_\_\_\_\_\_
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