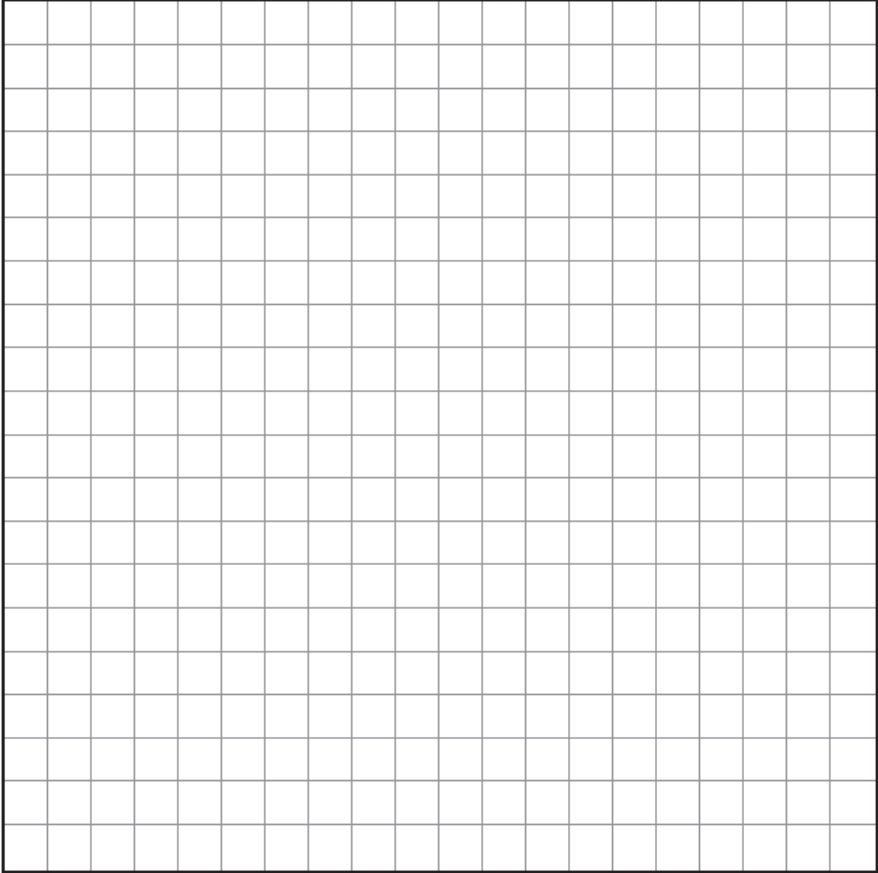


<p>1. If <math>f(x) = 2x^2 - 5x^6</math> and <math>g(x) = \sqrt{x}</math>, find <math>(f \circ g)(x)</math> in simplest form.</p>	<p>2. Solve algebraically for <math>x</math>: <math>8^{2x} = 4^6</math></p>	<p>1. _____</p> <p>2. _____</p>
<p>3. In physics class, Taras discovers that the behavior of electrical power, <math>x</math>, in a particular circuit can be represented by the function <math>f(x) = x^2 + 2x + 7</math>. If <math>f(x) = 0</math>, solve the equation and express your answer in simplest <math>a + bi</math> form.</p>		<p>3. _____</p>
<p>4. The time it takes to travel to a location varies inversely to the speed traveled. It takes 4 hours driving at an average speed of 55 miles per hour to reach a location. To the <i>nearest tenth of an hour</i>, how long will it take to reach the same location driving at an average speed of 50 miles per hour?</p>		<p>4. _____</p>
<p>5. When simplified, the expression <math>(\sqrt[3]{m^4})(m^{-\frac{1}{2}})</math> is equivalent to</p> <p>(1) <math>\sqrt[3]{m^{-2}}</math>                      (3) <math>\sqrt[5]{m^{-4}}</math></p> <p>(2) <math>\sqrt[4]{m^3}</math>                         (4) <math>\sqrt[6]{m^5}</math></p>	<p>6. Solve algebraically for <math>x</math>: <math>27^{x+2} = 9^{2x-1}</math></p>	<p>5. _____</p> <p>6. _____</p>
<p>7. A rectangular prism has a length of <math>\frac{2x^2 + 2x - 24}{4x^2 + x}</math>, a width of <math>\frac{x^2 + x - 6}{x + 4}</math>, and a height of <math>\frac{8x^2 + 2x}{x^2 - 9}</math>. For all values of <math>x</math> for which it is defined, express, in terms of <math>x</math>, the volume of the prism in simplest form.</p>		<p>7. _____</p>

<p>8. The equation <math>y = a^x</math> defines an exponential function when <math>a</math> equals</p> <p>(1) 1                                      (3) 0  (2) 2                                      (4) -1</p>	<p>9. If <math>b &gt; 0</math>, then the graph of <math>y = b^x</math> must contain point</p> <p>(1) (-1,0)                                      (3) (0,1)  (2) (1,0)                                      (4) (0,0)</p>
<p>10. Which of the following is <i>not</i> in the domain of <math>y = 2^x</math> ?</p> <p>(1) 1  (2) -2  (3) 3  (4) They are all in the domain.</p>	<p>11. If <math>f(x) = \left(\frac{1}{2}\right)^{x-5}</math> and <math>g(x) = x^{\frac{2}{3}}</math>, find <math>(f \circ g)(27)</math>.</p>
<p>12. On the accompanying grid, sketch the graph of <math>y = \left(\frac{1}{4}\right)^x</math> in the interval <math>-2 \leq x \leq 2</math>. Then, on the same set of axes, sketch the graph of <math>y = x + 5</math>. Use your calculator to graph the functions and find the value of <math>x</math> that would satisfy the equation <math>\left(\frac{1}{4}\right)^x = x + 5</math>.</p> 	

8. \_\_\_\_\_

9. \_\_\_\_\_

10. \_\_\_\_\_

11. \_\_\_\_\_

12. \_\_\_\_\_