



Keystone National High School Placement Exam

Math Level 1

<p>1.</p> <p>Find the seventh term in the following sequence: 2, 6, 18, 54 ...</p> <p>Answer: b) 1458</p>	<p>2.</p> <p>Write a numerical expression for the verbal phrase.</p> <p>“sixteen minus twelve divided by six”</p> <p>Answer: d) $16 - 12 \div 6$</p>
<p>3.</p> <p>Evaluate the expression: $6a + 2b - 6c + 4$, if $a=3$, $b=5$ and $c= -1$.</p> <p>Answer: a) 38</p>	<p>4.</p> <p>Rewrite the expression $(6 \cdot c) \cdot 12$ using the Associative Property.</p> <p>Answer: $6 \cdot (c \cdot 12)$</p>



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<p>5.</p> <p>Simplify the following using proper order of operations:</p> $5(16+3) - 6 \times 2 + 1$ <p>Answer: b) 84</p>	<p>6.</p> <p>Put the following integers in order from <i>greatest to least</i>:</p> <p>-3, 12, 9, -8, 13</p> <p>Answer: 13, 12, 9, -3, -8</p>
<p>7.</p> <p>Evaluate the following expression:</p> $ -4 + 12 - -9 $ <p>Answer: d) 7</p>	<p>8.</p> <p>Simplify the following expression:</p> $6(3x) - 2y + 3z + 12(4x) - 9y$ <p>Answer: a) $66x - 11y + 3z$</p>



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<p>13.</p> <p>Translate the following sentence into an equation. Then, find its solution.</p> <p>“If six is decreased by four times a number n, the result is twelve.”</p> <p>Answer: $6 - 4n = 12$; $n = -3/2$</p>	<p>14.</p> <p>Find the perimeter of a rectangle with a width of $(2x + 3)$ and a length of $2x$.</p> <p>Answer: $8x + 6$</p>
<p>15.</p> <p>Simplify the following:</p> $x^4 \cdot x^3 \cdot x$ <p>Answer: d) x^8</p>	<p>16.</p> <p>Write the expression using exponents. Then solve using $x=2$ and $y= -5$.</p> $2^2 y^2 y^2 x^2 x^2$ <p>Answer: a) $2^2 x^2 y^3$; -2000</p>



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<p>17.</p> <p>Find the GCF of the following set of numbers:</p> <p style="text-align: center;">260, 80, 50</p> <p>Answer: a) 10</p>	<p>18.</p> <p>Which of the following numbers is divisible by 3 and 9?</p> <p>Answer: b) 729</p>
<p>19.</p> <p>Write the following using negative exponents:</p> $\frac{1}{x^5}$ <p>Answer: x^{-5}</p>	<p>20.</p> <p>Write the following number in scientific notation:</p> <p style="text-align: center;">.00098</p> <p>Answer: 9.8×10^{-4}</p>

<p>21.</p> <p>Find the product and write it in simplest form.</p> $\frac{5}{9} \times 6\frac{3}{4}$ <p>Answer: a) 3 3/4</p>	<p>22.</p> <p>Find the quotient and write it in simplest form.</p> $3\frac{3}{8} \div \frac{1}{4}$ <p>Answer: c) 13 1/2</p>
<p>23.</p> <p>Simplify: $\frac{3}{8} - \frac{10}{13}$</p> <p>Answer: - 41/104</p>	<p>24.</p> <p>Find the mean, median and mode for the following set of temperatures. Round to the nearest tenth if needed.</p> <p>102, 100, 87, 76, 58, 91, 43, 100</p> <p>Answer:</p> <p>Mean = 82.1 Median = 89 Mode = 100</p>



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<p>25.</p> <p>A cheetah can run up to 60 miles per hour. How many inches per second is this?</p> <p>Answer: b) 1056 inches per second</p>	<p>26.</p> <p>Solve for x.</p> $\frac{3}{4} = \frac{12}{x-5}$ <p>Answer: b) x = 21</p>
<p>27.</p> <p>In an aquarium containing 230 fish, 20% are angelfish. How many of the fish are angelfish?</p> <p>Answer: d) 46</p>	<p>28.</p> <p>A t-shirt that normally costs \$21.95 is on sale at a 15% discount. What is the sale price?</p> <p>Answer: a) \$18.66</p>



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<p>29.</p> <p>Suppose you roll two die. Find the probability of rolling a seven.</p> <p>Answer: 1/6</p>	<p>30.</p> <p>Solve for m.</p> $2(3 + m) - 1 = 3m + 11$ <p>Answer: m = -6</p>
<p>31.</p> <p>Solve the inequality.</p> $7 < x + 3$ <p>Answer: $x > 4$ or $4 < x$</p>	<p>32.</p> <p>Solve the inequality. Final answer should be in decimal form and rounded to the tenths.</p> $-2/3 x + 5 < -2$ <p>Answer: $x > 10 \frac{1}{2}$</p>



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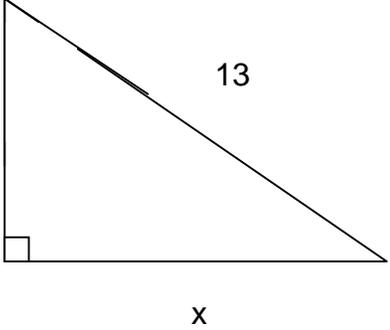
<p>33.</p> <p>Name the supplementary angle to 43°</p> <p>Answer: c) 137°</p>	<p>34.</p> <p>If two angles of a triangle are 30° and 102°, what is the third angle?</p> <p>Answer: a) 48°</p>
<p>35.</p> <p>Find the LCM of the following numbers</p> <p style="text-align: center;">8, 20, 36</p> <p>Answer: 360</p>	<p>36.</p> <p>Write the following in decimal form:</p> <p style="text-align: center;">“four hundred and twenty-six thousandths”</p> <p>Answer: 400.026</p>



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<p>37.</p> <p>Write the following in words:</p> <p>5,620,003.0263</p> <p>Answer: five million, six hundred twenty thousand, three and two hundred sixty-three ten-thousandths</p>	<p>38.</p> <p>Change 455 cm to meters</p> <p>Answer: b) 4.55 m</p>
<p>39.</p> <p>Write the following in standard notation:</p> <p>6.239×10^{-4}</p> <p>Answer: a) 0.0006239</p>	<p>40.</p> <p>Simplify the following. Write the final answer in Scientific Notation.</p> <p>$(3.2 \times 10^5)(5.7 \times 10^{-2})$</p> <p>Answer: b) 1.824×10^4</p>

<p>45.</p> <p>Three angles of a triangle are $2x$, $5x$ and $8x + 15$. Find the measure, in degrees, of each angle.</p> <p>Answer: 22 degrees 55 degrees 103 degrees</p>	<p>46.</p> <p>Find the length of x.</p>  <p>Answer: $x = 12$</p>
<p>47.</p> <p>Solve for y.</p> $4(y+3) + 2y = (9y+6) - 8$ <p>Answer: $y = 14/3$ or $4 \frac{2}{3}$</p>	<p>48.</p> <p>Solve. Write the answer in simplest form.</p> $\frac{3}{4} \times \frac{2}{5} \left(\frac{1}{3} + \frac{4}{7} \right) - \frac{1}{7}$ <p>Answer: $9/70$</p>



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<p>49.</p> <p>Angle 1 and angle 2 are supplementary angles. Find the degree measurement of each angle if angle 1 is $(5x + 1)$ and angle 2 is $(5x + 9)$.</p> <p>Answer: c) 86 degrees, 94 degrees</p>	<p>50.</p> <p>Find the area of a triangle with a base of 10m and a height of 12m. Area: $\frac{1}{2}(bxh)$</p> <p>Answer: c) 60 m²</p>
<p>51.</p> <p>The area of a circle is 120 in². Find the circumference. Round to the tenths if necessary. (Use 3.14 for π). Area: πr^2 Circumference: $d\pi$</p> <p>Answer: c) 39.0 in</p>	<p>52.</p> <p>Find the volume of a cylinder if the diameter is 30 ft and the height is 100 ft. (Use 3.14 for π). Volume: $\pi r^2 h$</p> <p>Answer: d) 70,650 ft³</p>



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<p>53.</p> <p>Find the Volume of a cube with height equal to 7in. Volume: e^3</p> <p>Answer: 343 in.³</p>	<p>54.</p> <p>Find the area of a trapezoid given $b_1=25\text{cm}$, $b_2=17\text{cm}$, and $h=9\text{cm}$. Area: $\frac{1}{2}(b_1 + b_2)h$</p> <p>Answer: 189 cm²</p>
<p>55.</p> <p>Find the area of a circle with diameter of 16 in. (Use 3.14 for π.) Area: πr^2</p> <p>Answer: 200.96 in.²</p>	<p>56.</p> <p>Find the Surface Area of a rectangular prism with length = 6in., width = 5 in., and height = 9 in.</p> <p>Answer: 258 in.²</p>



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<p>57.</p> <p>A card is selected from a standard deck of 52 cards. What are the odds of selecting a red 9?</p> <p>Answer: a) 1:26</p>	<p>58.</p> <p>Find the sum of the following polynomial:</p> $3(x - 1) + 2x + 3$ <p>Answer: d) 5x</p>
<p>59.</p> <p>Find the difference.</p> $(4x + 2y - 10) - 3(2x + 5y - 1)$ <p>Answer: c) $-2x - 13y - 7$</p>	<p>60.</p> <p>What percent of 115 is 23?</p> <p>Answer: b) 20%</p>