

<p><b>5-a-day ACT prep #6</b></p> <p>Solve each problem, show your work, and then choose the correct answer.</p> <p>Do not linger over problems that take too much time. Solve as many as you can; then return to the others in the time you have left for this test.</p> <p>You are permitted to use a calculator on this test. You may use your calculator for any problems you choose, but some of the problems may best be done without using a calculator.</p> <p>Note: Unless otherwise stated, all of the following should be assumed.</p> <ol style="list-style-type: none"> <li>Illustrative figures are NOT necessarily drawn to scale.</li> <li>Geometric figures lie in a plane.</li> <li>The word <i>line</i> indicates a straight line.</li> <li>The word <i>average</i> indicates arithmetic mean.</li> </ol>	<p>1. In the figure below all angles are right angles. The side lengths have measures as shown. What is the perimeter of the figure?</p> <p>A. 27          B. 42  <u>C. 54</u>          D. 108          E. Cannot be determined.</p> <p><math>A + B + C = 9</math>  <math>D + E = 12</math>  <math>F = 6</math></p> <p><math>9 + 12 + 6 + 9 + 12 + 6 = 54</math></p>
<p>2. The lines <math>x + y = -5</math> and <math>4x - y = 20</math> intersect at which of the following points?</p> <p>A. <math>(-2, -3)</math>          B. <math>(-1, -4)</math>  <u>C. <math>(1, -6)</math></u>          D. <math>(3, -8)</math>          E. <math>(4, -9)</math></p> <p><i>Add (Elimination)</i></p> $\begin{array}{r} x + y = -5 \\ + \quad 4x - y = 20 \\ \hline 5x = 15 \\ x = 3 \end{array}$ <p><math>y = -8</math>  <math>3 + y = -9</math></p>	<p>3. On a map, <math>\frac{1}{2}</math> inch represents 60 miles. What distance does a line segment that is <math>3\frac{1}{4}</math> inches represent?</p> <p>A. 210 miles          B. 360 miles  <u>C. 390 miles</u>          D. 420 miles          E. 450 miles</p> <p><math>\frac{1}{2} \text{ in} = 60 \text{ miles}</math>  <math>1 \text{ in} = 120 \text{ miles}</math>  <math>3 \times 120 = 360</math>  <math>\frac{1}{4} \text{ in} = 30 \text{ miles}</math>  <math>360 + 30 = 390</math></p>
<p>4. What is the value of <math>x</math> in the equation <math>3x + 34 = -2(1 - 6x)</math>?</p> <p>A. <math>-\frac{4}{5}</math>          B. <math>-\frac{12}{5}</math>          C. <math>\frac{32}{15}</math>          D. <math>\frac{32}{9}</math>  <u>E. 4</u></p> <p><math>3x + 34 = -2 + 12x</math>  <math>-3 + 2 + 2 - 3</math>  <math>36 = 9x</math>  <math>x = 4</math></p>	<p>5. A bag contains 3 red marbles, 7 yellow marbles, and 5 white marbles. Grant randomly picks a marble out of the bag. What is the probability it is not white?</p> <p>A. <math>\frac{1}{5}</math>          B. <math>\frac{1}{3}</math>          C. <math>\frac{7}{15}</math>          D. <math>\frac{8}{15}</math>  <u>E. <math>\frac{2}{3}</math></u></p> <p><math>3 + 7 + 5 = 15</math>          not white = 10  <math>\frac{10}{15} = \frac{2}{3}</math></p>