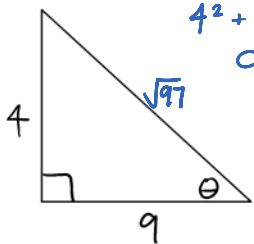
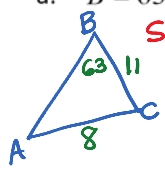


Advanced Algebra with Trig  
Ch. 13 Trig Review – Yahtzee!

Name: *Key*  
Period:

Question	Roll
<p>1. Evaluate the six trigonometric functions of the angle <math>\theta</math>.</p>  <p><math>4^2 + 9^2 = c^2</math> <math>c = \sqrt{97}</math></p> <p><math>\sin\theta = \frac{4}{\sqrt{97}} \cdot \frac{\sqrt{97}}{\sqrt{97}} = \frac{4\sqrt{97}}{97}</math>    <math>\csc\theta = \frac{\sqrt{97}}{4}</math>  <math>\cos\theta = \frac{9\sqrt{97}}{97}</math>    <math>\sec\theta = \frac{\sqrt{97}}{9}</math>  <math>\tan\theta = \frac{4}{9}</math>    <math>\cot\theta = \frac{9}{4}</math></p>	
<p>2. Convert the degree measure to radians or the radian measure to degrees.</p> <p>a. <math>-50^\circ</math>    b. <math>260^\circ</math>    c. <math>\frac{4\pi}{5} \times \frac{180^\circ}{\pi}</math>    d. <math>\frac{8\pi}{3} \times \frac{180^\circ}{\pi}</math></p> <p><math>-50^\circ \times \frac{\pi}{180^\circ} = -\frac{5\pi}{18}</math>    <math>260^\circ \times \frac{\pi}{180^\circ} = \frac{13\pi}{9}</math>  <math>144^\circ</math>    <math>480^\circ</math></p>	
<p>3. Evaluate the function <i>without using a calculator</i>.</p> <p>a. <math>\tan 150^\circ</math>    b. <math>\sec(-480^\circ)</math>    c. <math>\sin\left(-\frac{5\pi}{3}\right)</math></p> <p><math>30^\circ = (\frac{\sqrt{3}}{2}, \frac{1}{2})</math>    <math>60^\circ = (\frac{1}{2}, \frac{\sqrt{3}}{2})</math>    <math>(\frac{1}{2}, \frac{\sqrt{3}}{2})</math>      2nd Quad: <math>(-\frac{\sqrt{3}}{2}, \frac{1}{2})</math>    3rd Quad <math>\Rightarrow</math> <math>(-\frac{1}{2}, -\frac{\sqrt{3}}{2})</math>  <math>\tan 150^\circ = \frac{\frac{1}{2}}{-\frac{\sqrt{3}}{2}} = \frac{1}{2} \cdot -\frac{2}{\sqrt{3}} = -\frac{1}{\sqrt{3}} = -\frac{\sqrt{3}}{3}</math>    <math>\sec = \frac{1}{\cos} = -\frac{1}{\frac{1}{2}} = -2</math>    <math>\frac{\sqrt{3}}{2}</math></p>	
<p>4. Evaluate the expression in both radians and degrees <i>without using a calculator</i>.</p> <p>a. <math>\cos^{-1} 1</math>    b. <math>\tan^{-1} \sqrt{3}</math>    c. <math>\sin^{-1}\left(-\frac{\sqrt{2}}{2}\right)</math>    d. <math>\sin^{-1}\left(-\frac{\sqrt{2}}{2}\right)</math></p> <p><math>0^\circ</math> or <math>0\text{rad}</math>    <math>60^\circ</math> or <math>\frac{\pi}{3}</math>    <math>-45^\circ</math> or <math>-\frac{\pi}{4}</math>    <i>undefined</i></p> <p><math>\frac{\sqrt{3}}{2}</math> (sin) <math>(\frac{1}{2}, \frac{\sqrt{3}}{2})</math>  <math>\frac{1}{2}</math> (cos)</p>	
<p>5. Solve <math>\triangle ABC</math>. Hint: some of the triangles may have no solution and some may have two solutions.</p> <p>a. <math>B = 63^\circ, a = 11, b = 8</math>    b. <math>a = 24, b = 12, c = 17</math></p> <p><i>SSA</i>    <math>\frac{\sin A}{11} = \frac{\sin 63}{8}</math>    <i>SSS</i>    <math>12^2 = 17^2 + 24^2 - 2(17)(24)\cos B</math>      <math>\sin A = \frac{11 \sin 63}{8}</math>    <math>144 = 865 - 816 \cos B</math>  <math>\sin A = 1.23</math>    <math>.88 = \cos B</math>    <math>27.9^\circ = B</math>  <i>No triangle!</i>    <math>\frac{\sin 27.9}{12} = \frac{\sin C}{17}</math>    <math>A = 180 - (27.9 + 41.6)</math>  <math>A = 110.5^\circ</math></p>	

$$\sin A = 1.23$$

NO triangle!

$$\frac{\sin 27.9}{12} = \frac{\sin C}{17}$$
$$\sin C = \frac{17 \sin 27.9}{12}$$

$$C = 41.6^\circ$$

$$A = 180 - (27.9 + 41.6)$$

$$A = 110.5^\circ$$