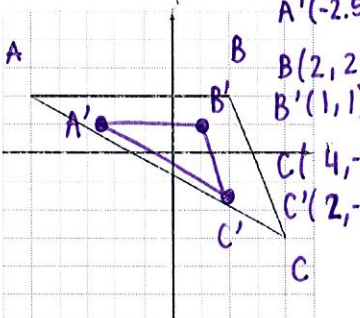
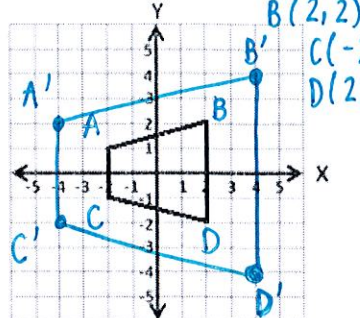
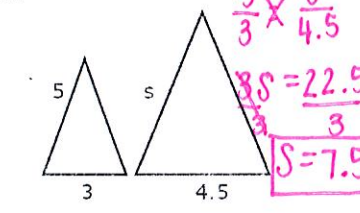
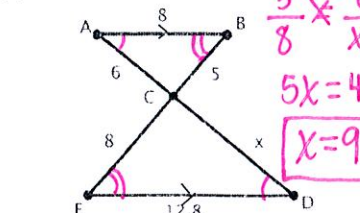
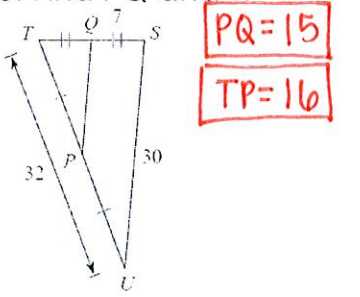
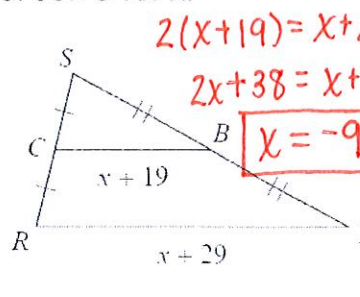
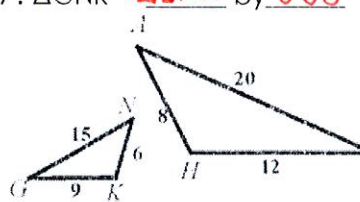
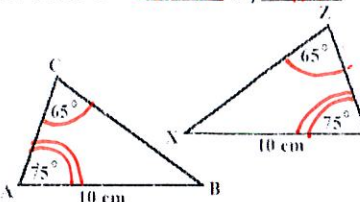


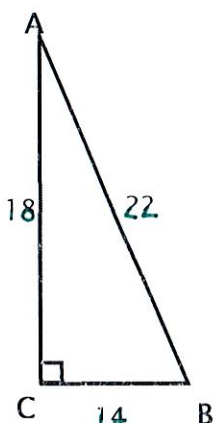
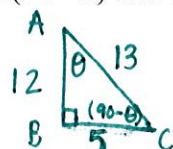
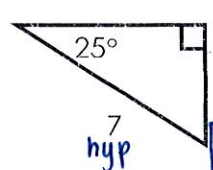
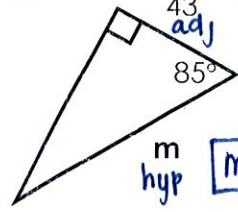
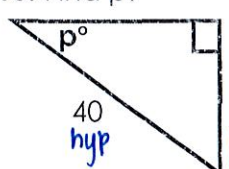
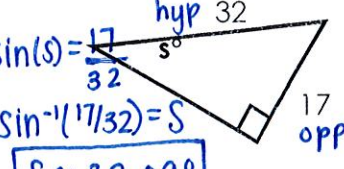
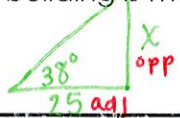
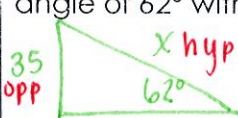
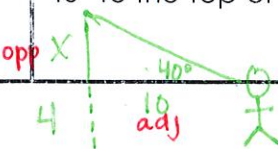
Name \_\_\_\_\_ Date \_\_\_\_\_

**UNIT 3 TEST REVIEW**

Use the following to review for you test. Work the Practice Problems on a separate sheet of paper.

Topic	Things to remember	Examples	
<p><b>A. Perform a dilation with a given scale factor</b></p>	<p>When the center of dilation is the origin, you can multiply each coordinate of the original figure, or pre-image, by the scale factor to find the coordinates of the dilated figure, or image.</p>	<p>1. Dilate with <math>k = \frac{1}{2}</math>. <math>A(-5,2)</math>  <math>A'(-2.5,1)</math>  <math>B(2,2)</math>  <math>B'(1,1)</math>  <math>C(4,-3)</math>  <math>C'(2,-1.5)</math></p> 	<p>2. Dilate with <math>k = 2</math>. <math>A(-2,1)</math>  <math>A'(-4,2)</math>  <math>B(2,2)</math>  <math>B'(4,4)</math>  <math>C(-2,-1)</math>  <math>C'(-4,-2)</math>  <math>D(2,-2)</math>  <math>D'(4,-4)</math></p> 
<p><b>B. Find the missing side for similar figures.</b></p>	<p>Set up a proportion by matching up the corresponding sides. Then, solve for x.</p>	<p>3. <math>\frac{5}{3} \times \frac{8}{4.5}</math>  <math>8S = 22.5</math>  <math>S = 7.5</math></p> 	<p>4. <math>\frac{5}{8} \times \frac{6}{x}</math>  <math>5x = 48</math>  <math>x = 9.6</math></p> 
<p><b>C. Midsegment Theorem</b></p>	<p>The segment connecting the midpoints of two sides of the triangle is parallel to the third side and 1/2 the length of the third side.</p>	<p>5. Find PQ and TP  <math>PQ = 15</math>  <math>TP = 16</math></p> 	<p>6. Solve for x.  <math>2(x+19) = x+29</math>  <math>2x+38 = x+29</math>  <math>x = -9</math></p> 
<p><b>D. Determine if 2 triangles are similar, and write the similarity statement.</b></p>	<p>Remember the 3 ways that you can do this: AA, SAS, SSS</p>	<p>7. <math>\triangle GNK \sim \triangle LAH</math> by <u>SSS</u></p> 	<p>8. <math>\triangle ABC \sim \triangle XYZ</math> by <u>AA</u></p> 

$\frac{8}{6} = \frac{12}{9} = \frac{20}{15}$   
 $\frac{4}{3} = \frac{4}{3} = \frac{4}{3} \checkmark$

<p><b>E. Find sin, cos, and tan ratios</b></p>	<p>Just find the fraction using SOHCAHTOA</p>		<p>9. Find sin A. <math>14/22 = \boxed{7/11}</math></p> <p>10. Find tan B. <math>18/14 = \boxed{9/7}</math></p> <p>11. Find cos B. <math>14/22 = \boxed{7/11}</math></p> <p>12. Find tan A. <math>14/18 = \boxed{7/9}</math></p>
<p><b>F. Know the relationship between the ratios for complementary angles.</b></p>	<p><math>\sin \theta = \cos(90 - \theta)</math>  <math>\cos \theta = \sin(90 - \theta)</math>  <math>\tan \theta = \frac{1}{\tan(90 - \theta)}</math></p>	<p>13. Given Right <math>\triangle ABC</math> and <math>\sin \theta = 5/13</math>, find <math>\sin(90 - \theta)</math> and <math>\cos(90 - \theta)</math>. <math>a^2 + 5^2 = 13^2 \rightarrow a = 12</math></p>  <p><math>\sin(90 - \theta) = 12/13</math>  <math>\cos(90 - \theta) = 5/13</math></p>	
<p><b>G. Use trig to find a missing side measure</b></p>	<p>Set up the ratio and then use your calculator.          If the variable is on the top, multiply.          If the variable is on the bottom, divide.</p>	<p>14. Find f.</p>  <p><math>\sin(25) = \frac{f}{7}</math>  <math>7(\sin(25)) = f</math>  <math>f \approx 2.96</math></p>	<p>15. Find m.</p>  <p><math>\cos(85) = \frac{43}{m}</math>  <math>m = \frac{43}{\cos(85)}</math>  <math>m \approx 493.37</math></p>
<p><b>H. Use trig to find a missing angle measure</b></p>	<p>Tap the trig button twice to get the INVERSE then type in the ratio.</p>	<p>16. Find p.</p>  <p><math>\sin(p) = \frac{13}{40}</math>  <math>\sin^{-1}(\frac{13}{40}) = p</math>  <math>p \approx 18.97^\circ</math></p>	<p>17. Find s.</p>  <p><math>\sin(s) = \frac{17}{32}</math>  <math>\sin^{-1}(17/32) = s</math>  <math>s \approx 32.09^\circ</math></p>
<p><b>I. Trig Word Problems</b></p>	<p>Draw the picture. Label the sides. Set up the ratio, and solve.</p>	<p>18. From 25 feet away from the base of a building, the angle of elevation from the ground to the top of a building is measured to be <math>38^\circ</math>. How tall is the building?</p>  <p><math>\tan(38) = \frac{x}{25}</math>  <math>25(\tan(38)) = x</math>  <math>x \approx 19.53 \text{ ft}</math></p> <p>19. A kite is 35 feet in the air and the string forms an angle of <math>62^\circ</math> with the ground. How long is the string?</p>  <p><math>\sin(62) = \frac{35}{x}</math>  <math>x = 35/\sin(62)</math>  <math>x \approx 39.64 \text{ ft}</math></p> <p>20. Lucy, whose eye level is 4 feet from the ground, stands 10 feet away from the base of a tree. From her line of sight, she is looking at an angle of elevation of <math>40^\circ</math> to the top of the tree. How tall is the tree?</p>  <p><math>\tan(40) = \frac{x}{10}</math>  <math>10(\tan(40)) = x</math>  <math>x \approx 8.39</math>      Tree = <math>8.39 + 4 = 12.39</math>      The tree is 12.39 ft tall.</p>	