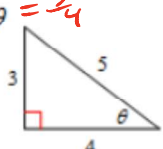
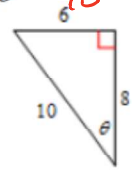
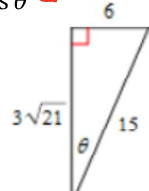
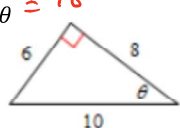
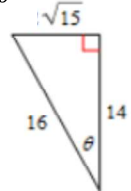
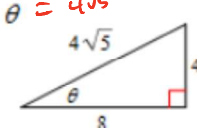
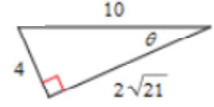
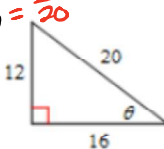


# The Trigonometric Functions

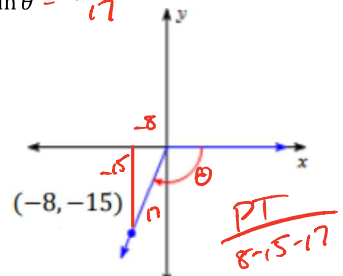
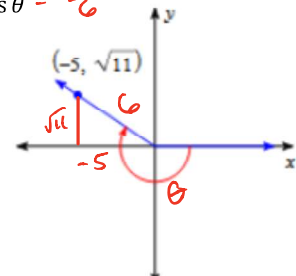
18.3 – Reference Triangles

Name \_\_\_\_\_

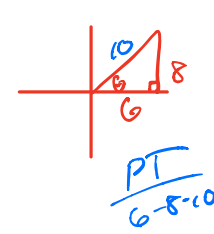
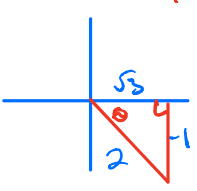
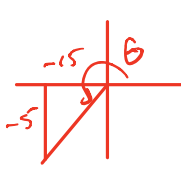
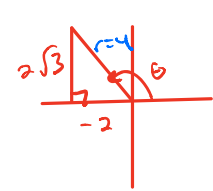
Find the **RATIO** of the trig function indicated. Do **NOT** find the actual measure of the angle!

<p>1. <math>\tan \theta = \frac{3}{4}</math></p> 	<p>2. <math>\sin \theta = \frac{6}{10}</math></p> 	<p>3. <math>\cos \theta = \frac{3\sqrt{21}}{15}</math></p> 	<p>4. <math>\tan \theta = \frac{6}{8}</math></p> 
<p>5. <math>\sin \theta = \frac{\sqrt{15}}{16}</math></p> 	<p>6. <math>\cos \theta = \frac{8}{4\sqrt{5}}</math></p> 	<p>7. <math>\tan \theta = \frac{4}{2\sqrt{21}}</math></p> 	<p>8. <math>\sin \theta = \frac{12}{20}</math></p> 

Use the given point on the terminal side of the angle  $\theta$  to find the trigonometric function indicated.

<p>9. <math>\sin \theta = -\frac{15}{17}</math></p>  <p>PT 8-15-17</p>	<p>10. <math>\cos \theta = -\frac{5}{6}</math></p>  <p><math>x^2 + y^2 = r^2</math>  <math>(-5)^2 + (\sqrt{11})^2 = r^2</math>  <math>25 + 11 = r^2</math>  <math>36 = r^2</math>  <math>\pm 6 = r</math></p>
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Draw the reference triangle. Find the **EXACT** value of the trig ratio for  $\theta$ .

<p>11. <math>\sin \theta</math> for <math>(6, 8)</math></p> <p><math>x</math> <math>y</math></p>  <p>PT 6-8-10</p> <p><math>\sin \theta = \frac{8}{10}</math></p>	<p>12. <math>\cos \theta</math> for <math>(\sqrt{3}, -1)</math></p> <p><math>x</math> <math>y</math></p>  <p>special <math>\Delta</math> 30-60-90</p> <p><math>x^2 + y^2 = r^2</math>  <math>(\sqrt{3})^2 + (-1)^2 = r^2</math>  <math>3 + 1 = r^2</math>  <math>4 = r^2</math>  <math>\pm 2 = r</math></p> <p><math>\cos \theta = \frac{\sqrt{3}}{2}</math></p>
<p>13. <math>\tan \theta</math> for <math>(-15, -5)</math></p> <p><math>x</math> <math>y</math></p>  <p><math>\tan \theta = \frac{-5}{-15}</math></p>	<p>14. <math>\sin \theta</math> for <math>(-2, 2\sqrt{3})</math></p> <p><math>x</math> <math>y</math></p>  <p><math>(-2)^2 + (2\sqrt{3})^2 = r^2</math>  <math>4 + 4 \cdot 3 = r^2</math>  <math>4 + 12 = r^2</math>  <math>16 = r^2</math>  <math>\pm 4 = r</math></p> <p><math>\sin \theta = \frac{2\sqrt{3}}{4}</math></p>

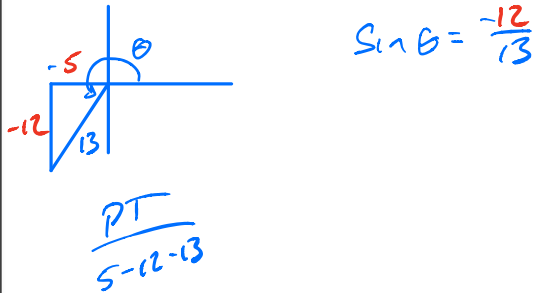
# The Trigonometric Functions

18.3 – Reference Triangles

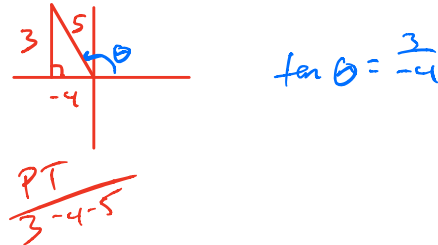
Name \_\_\_\_\_

**Draw the reference triangle. Find the EXACT value of the trig ratio for  $\theta$ .**

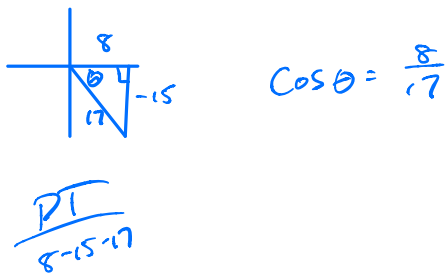
15. Given  $\tan \theta = \frac{12}{5}$  in quadrant III.  
Find  $\sin \theta$



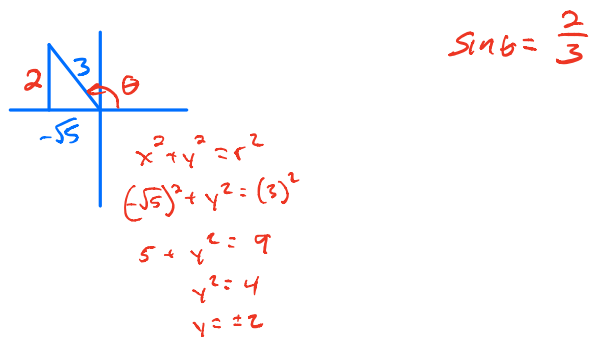
16. Given  $\cos \theta = -\frac{4}{5}$  where  $\frac{\pi}{2} < \theta < \pi$ . Find  $\tan \theta$   
QUAD II



17. Given  $\tan \theta = -\frac{15}{8}$  where  $\sin \theta < 0$ .  
Find  $\cos \theta$ .  
 $y$  is negative

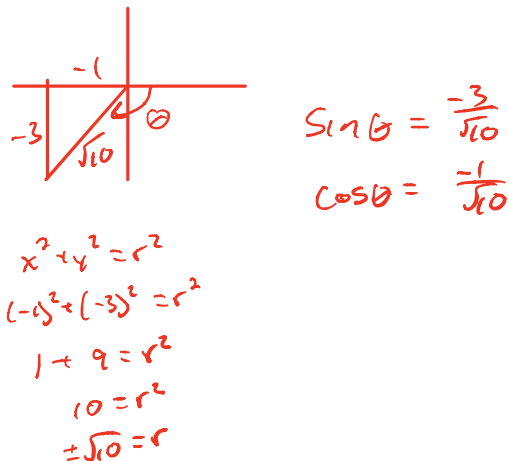


18. Given  $\cos \theta = -\frac{\sqrt{5}}{3}$  where  $\tan \theta$  is negative.  
Find  $\sin \theta$



**Find the exact value of the other 2 trig functions for angle  $\theta$  in standard position.**

19.  $\tan \theta = 3$  in quadrant III  
 $\tan \theta = \frac{y}{x} = \frac{-3}{-1}$



20.  $\sin \theta = \frac{3}{5}$  in quadrant II

