

9.4 Special Right Triangles:

$30-60-90$   
 $45-45-90$

All side lengths  
 for  $30-60-90$   
 for  $45-45-90$   
 are similar

45-45-90

$\sqrt{a^2 + a^2}$   
 $\sqrt{2a^2}$

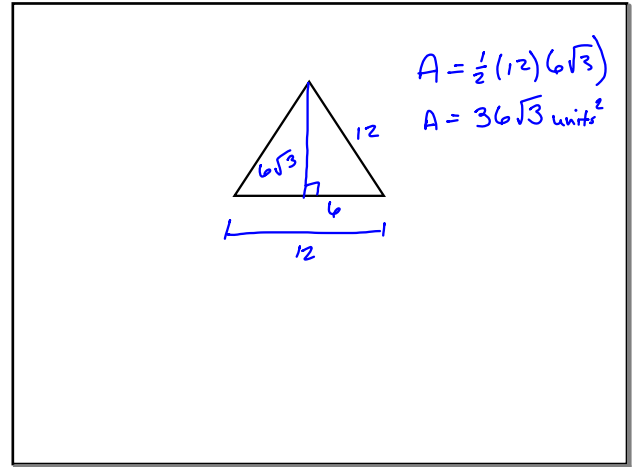
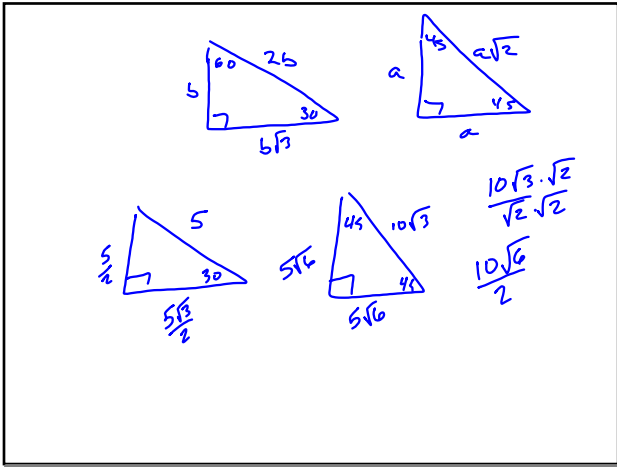
$a^2 + a^2 = 5^2$   
 $2a^2 = \frac{25}{2}$   
 $\sqrt{a^2} = \sqrt{\frac{25}{2}}$   
 $a = \frac{5 \cdot \sqrt{2}}{\sqrt{2} \cdot \sqrt{2}}$   
 $a = \frac{5\sqrt{2}}{2}$

$b^2 + (b\sqrt{3})^2 = (2b)^2$   
 $b^2 + 3b^2 = 4b^2$   
 $4b^2 = 4b^2$

3 separate lengths  
 short leg  $b$   
 long leg  $b\sqrt{3}$   
 hypotenuse  $2b$

$\frac{\sqrt{3} \cdot 4}{\sqrt{3} \cdot \sqrt{3}} = \frac{4\sqrt{3}}{3}$   
 $\frac{4\sqrt{3}}{3} = b$

$2 \cdot \frac{4\sqrt{3}}{3}$



7554-555  
2-3/even