Name _____ Period _____ Date _____

Advanced Functions and Modeling **Unit 7 Homework 6**

Find the area of each triangle. Show the set up of the problem. Round to the nearest tenth.

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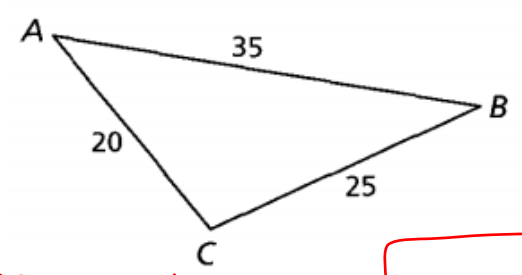
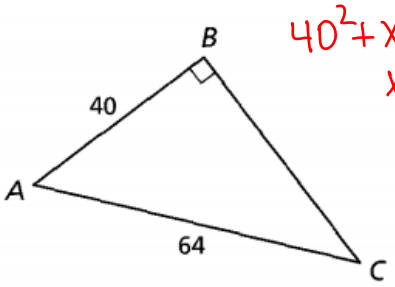


$S = \frac{35+20+25}{2} = 40$ $A = \sqrt{40(40-35)(40-20)(40-25)}$

$A = 244.9$

2.



$40^2 + x^2 = 64^2$

$x^2 = 2496$

$x = 8\sqrt{39}$

$A = \frac{1}{2}bh$

$A = \frac{1}{2}(40)(8\sqrt{39})$

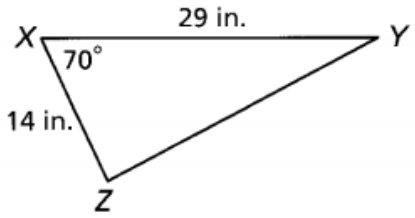
$A = 160\sqrt{39}$ OR 999.2

3. A triangular plot of land has side lengths 65 ft, 74 ft, and 101 ft. Find the area of the land.

$S = \frac{65+74+101}{2}$ $\sqrt{120(120-65)(120-74)(120-101)}$

$S = 120$ $A = 2401.7$

4.

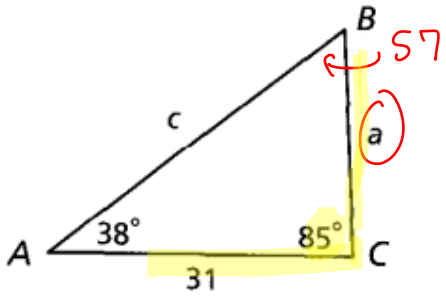


$A = \frac{1}{2}(14)(29)\sin(70)$

$A = 190.8$

Use the Law of Sines to find the necessary side measure needed to find the area. Then find the area.

5.



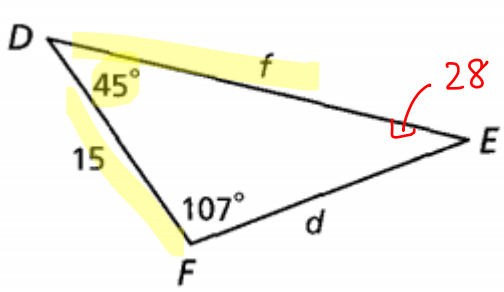
$\frac{\sin 57}{31} = \frac{\sin 38}{a}$

$a = 22.76$

$A = \frac{1}{2}(31)(22.76)(\sin 85)$

$A = 351.4$

6.



$\frac{\sin 28}{15} = \frac{\sin 107}{f}$

$f = 30.55$

$A = \frac{1}{2}(15)(30.55)(\sin 45)$

$A = 162$