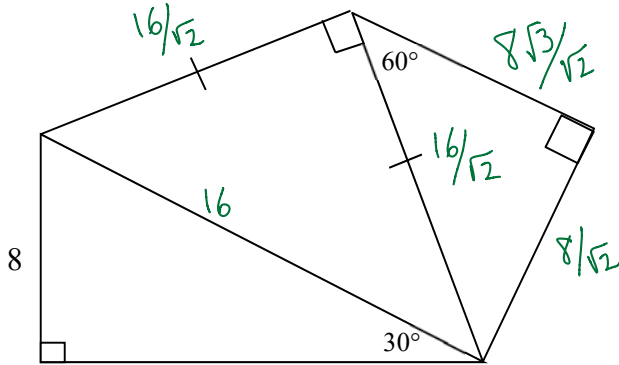
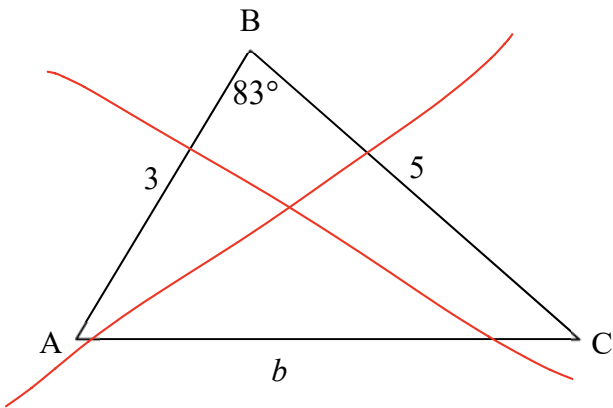


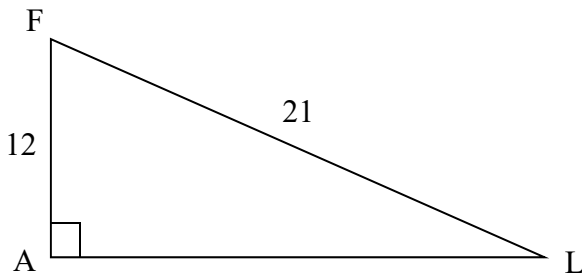
1. Find the **EXACT** values of all the sides in the figure below. Label the diagram with your answers.



2. Find the missing sides and angles.



3. Solve the right triangle. Label the diagram with your answers.



$$AL^2 + 12^2 = 21^2$$

$$AL^2 = 441 - 144$$

$$= \sqrt{297} = 3\sqrt{33}$$

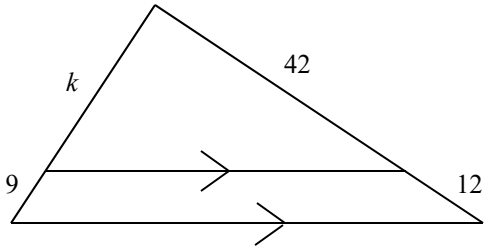
$$\sin L = \frac{12}{21} = \frac{4}{7}$$

$$m\angle L = \sin^{-1}\left(\frac{4}{7}\right) \approx 34.85^\circ$$

$$m\angle F = 90 - m\angle L \approx 55.15^\circ$$

A.M.D.G.

4. Solve for k .

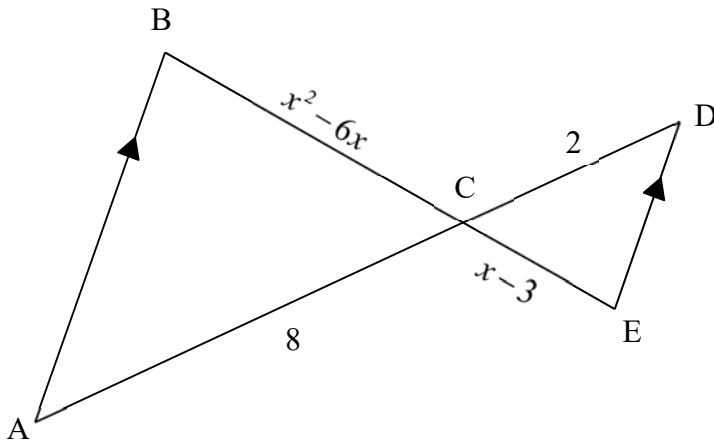


$$\frac{k}{9} = \frac{42}{12} = \frac{7}{2}$$

$$2k = 63$$

$$k = \frac{63}{2}$$

5. Use the figure below to answer the following:



a) Write a similarity statement. **Explain** why the triangles are similar.

$AB \parallel DE \therefore \angle A \cong \angle D, \angle B \cong \angle E$ by the alternate interior \angle 's thm so the Δ 's are similar by AA

b) Solve for x . $\frac{2}{8} = \frac{x-3}{x^2-6x} \Rightarrow 2x^2 - 12x = 8x - 24$

$$2x^2 - 20x + 24$$

$$2(x^2 - 10x + 12)$$

$$x = \frac{10 \pm \sqrt{100 - 48}}{2} = \frac{10 \pm 2\sqrt{13}}{2} = 5 \pm \sqrt{13}$$

$$\underline{5 + \sqrt{13}} \text{ works}$$

$$5 - \sqrt{13} < 3 \text{ so } x - 3 < 0$$

c) Find the lengths of BC and EC .

$$x = 5 + \sqrt{13} = 8.60555 \dots$$

$$BC = x^2 - 6x = 22.422$$

$$EC = x - 3 = 5.606$$