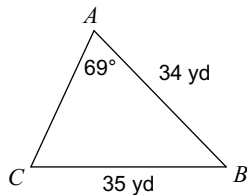


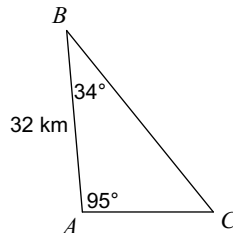
SM3 HW #6-6 (Law of Cosines)

Find each measurement indicated. Round your answers to the nearest tenth.

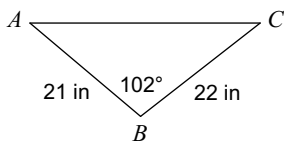
1) Find $m\angle C$



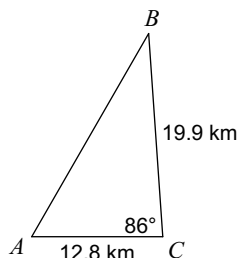
2) Find AC



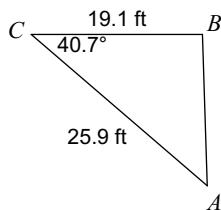
3) Find AC



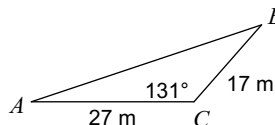
4) Find AB



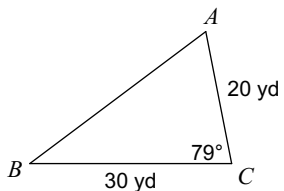
5) Find $m\angle A$



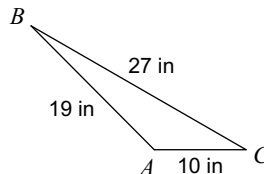
6) Find $m\angle A$



7) Find $m\angle A$



8) Find $m\angle A$



- 9) Scientists measured the distances between 3 footprints of a dinosaur as it walked through a prehistoric mud flat (left footprint-step-right foot print- step - left foot print). The distance between the 1st left footprint and the 1st right footprint was 155 cm. The distance between the 1st right footprint and the 2nd left footprint was 197 cm. The distance between the two left foot prints was 316 cm.
- draw a triangle whose vertices are two left foot prints and one right foot print as the dinosaur made 3 steps. Label the length of the sides.
 - The angle at the right footprint is called the "step angle." What is the step angle?
 - The closer this angle is to 180, the more efficiently the dinosaur walked. If the animal takes longer steps, will it be more efficient?

State the number of possible triangles that can be formed using the given measurements.

10) $m\angle C = 60^\circ$, $b = 20$ km, $c = 12$ km

11) $m\angle A = 131^\circ$, $c = 8$ m, $a = 25$ m

12) $m\angle B = 32^\circ$, $a = 25$ yd, $b = 20$ yd

13) $m\angle B = 29^\circ$, $a = 27$ m, $b = 24$ m

Solve each equation. Round your answers to the nearest ten-thousandth.

14) $19^{n-1} + 1 = 24$

15) $-9 \cdot 3^{5b} = -56$

Solve each equation.

16) $n^2 - 20n - 5 = 0$

17) $x^2 + 6x - 25 = 0$

Solve each equation. Remember to check for extraneous solutions.

18) $\frac{1}{3m^2} + \frac{5m - 30}{m^2} = \frac{m + 2}{3m^2}$

19) $\frac{1}{x} = \frac{x + 6}{4x} - \frac{1}{4x}$