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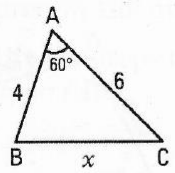
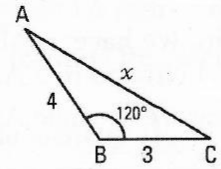
10. Use the cosine law to calculate the value of x. (Round to the nearest tenth.)

a)



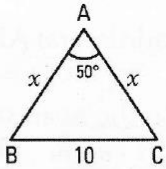
x = 5.3

b)



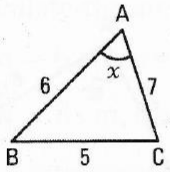
x = 6.1

c)



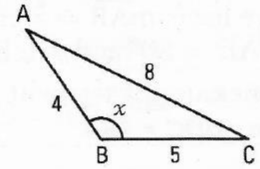
x = 11.8

d)



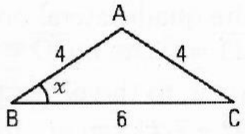
x = 44.4°

e)



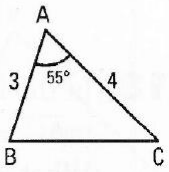
x = 125.1°

f)



x = 41.4°

11. Solve the following triangle.



m$\overline{BC}$ = 3.35

m ∠B = 78°

m ∠C = 47.2°

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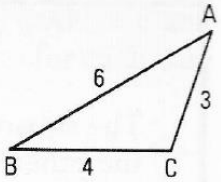
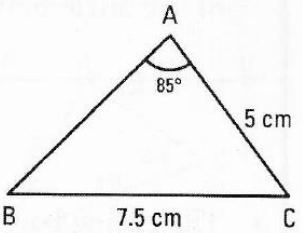
12. Solve the triangle on the right. (Round each measure to the nearest tenth.)



m ∠A = 36.3°; m ∠B = 26.4°; m ∠C = 117.3°

13. In the triangle on the right, we have: m$\overline{AC}$ = 5 cm, m$\overline{BC}$ = 7.5 cm and m ∠A = 85°.

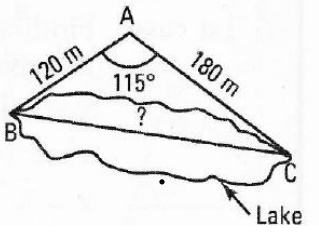
What is, to the nearest tenth, the measure of side AB?



m ∠B = 41.6°; m ∠C = 53.4°; m$\overline{AB}$ = 6.04

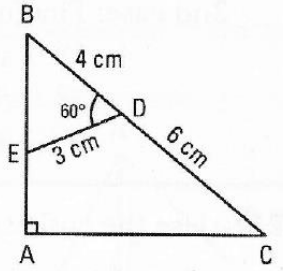
The measure of $\overline{AB}$, to the nearest tenth, is 6 cm.

14. An engineer wants to determine the distance between two cottages on opposite sides of a lake. The engineer is located at point A and the cottages are at B and C. What is, to the nearest metre, the distance separating the two cottages?



255 m

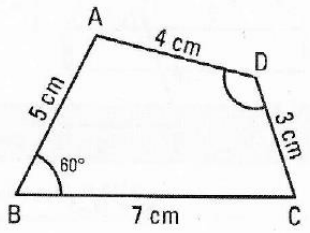
15. In the triangle ABC on the right, segment DE is drawn.
$m\angle BDE = 60°$, $m\overline{BD} = 4$ cm, $m\overline{DE} = 3$ cm and $m\overline{DC} = 6$ cm.
What is, to the nearest hundredth, the measure of side AC?



$m\overline{BE} = \sqrt{13} \approx 3.61$ cm; $m\angle B \approx 46°$;

$m\overline{AC} = 10 \sin 46° = 7.19$ cm

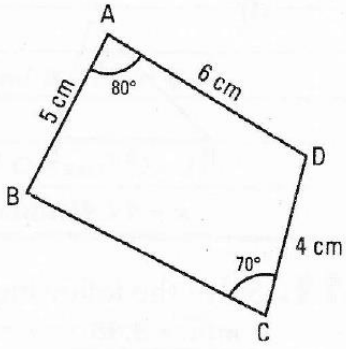
16. In the quadrilateral ABCD on the right, we have: $m\overline{AB} = 5$ cm, $m\overline{BC} = 7$ cm, $m\overline{CD} = 3$ cm, $m\overline{AD} = 4$ cm and $m\angle ABC = 60°$.
What is, to the nearest degree, the measure of angle ADC?



$m\overline{AC} = 6.24$ cm; $m\angle ADC = 125.7°$

Angle D measures 126° to the nearest degree.

17. In the quadrilateral on the right, we have: $m\overline{AB} = 5$ cm, $m\overline{AD} = 6$ cm, $m\overline{CD} = 4$ cm, $m\angle BAD = 80°$ and $m\angle BCD = 70°$.
What is, to the nearest tenth, the measure of segment BC?

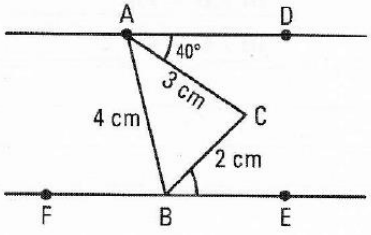


$m\overline{BD} = 7.11$ cm; $m\angle DBC = 31.9°$; $m\angle BDC = 78.1°$

$m\overline{BC} = 7.40$ cm.

The measure of $\overline{BC}$, to the nearest tenth, is 7.4 cm.

18. In the figure on the right, lines AD and FE are parallel,
$m\overline{AC} = 3$ cm, $m\overline{BC} = 2$ cm and $m\overline{AB} = 4$ cm.
What is, to the nearest degree, the measure of angle CBE?



$m\angle BAC \approx 29°$, $m\angle ABC = 46.7°$

$m\angle ABF = 69°$, $m\angle CBE = 64.3°$

Angle CBE measures 64° to the nearest degree.