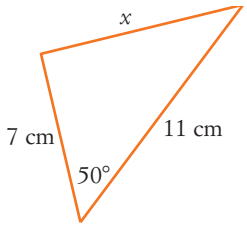
WORKSHEET

# The cosine rule – Angles and sides

Using the cosine rule, calculate the missing lengths and angles in these right-angled triangles. Give answers to one decimal place or to the nearest degree,

**1**

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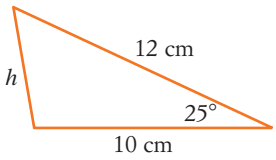


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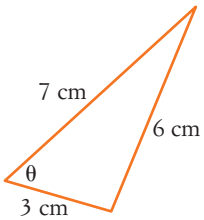


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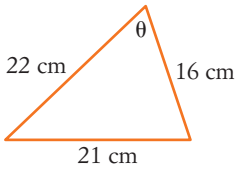


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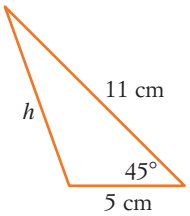


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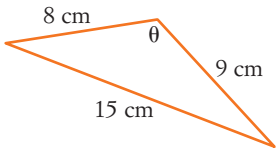


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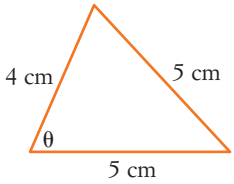


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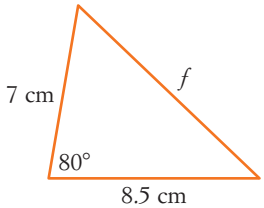

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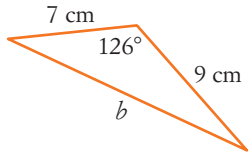


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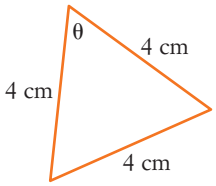


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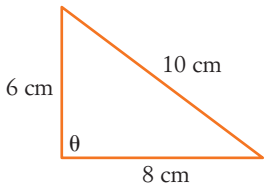


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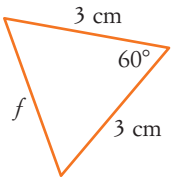


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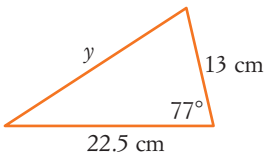


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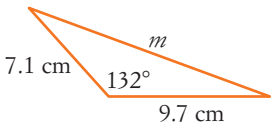


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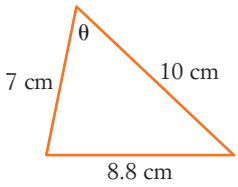


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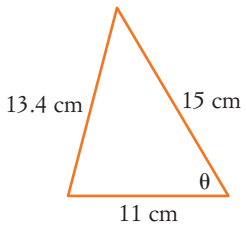


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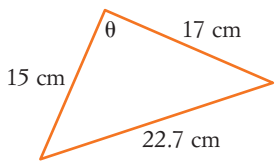


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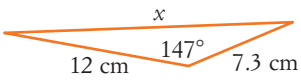

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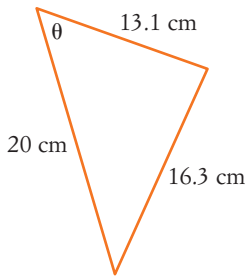


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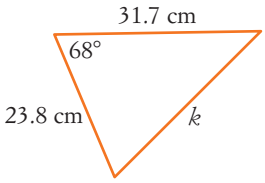



**21** In $\triangle ABC$, $\angle A = 75°$, $b = 14$ cm and $c = 18$ cm.

**i** Draw a sketch of $\triangle ABC$, showing all the information given.

**ii** Calculate the length of $a$ to one decimal place.

**22** In $\triangle XYZ$, $x = 9.4$ cm, $y = 6.2$ cm and $z = 8.1$ cm.

**i** Draw a sketch of $\triangle ABC$, showing all the information given.

**ii** Calculate the size of $\angle X$ to the nearest degree.

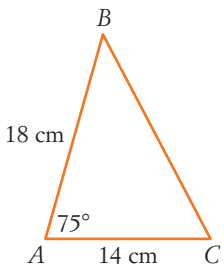
**23** In $\triangle DEF$, $\angle E = 136°$, $d = 5$ cm and $f = 7.2$ cm.

**i** Draw a sketch of $\triangle DEF$, showing all the information given.

**ii** Calculate the length of $e$ to one decimal place.

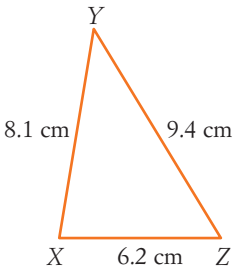
## Answers

**1** 8.4 cm
**2** 5.1 cm
**3** 58°
**4** 65°
**5** 8.3 cm
**6** 124°
**7** 66°
**8** 8.5 cm
**9** 14.3 cm
**10** 60°
**11** 90°
**12** 3 cm
**13** 23.3 cm
**14** 15.4 cm
**15** 59°
**16** 60°
**17** 90°
**18** 18.6 cm
**19** 54°
**20** 23.8 cm
**21** **i**




**ii** 14 cm

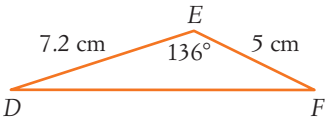
**22** **i**




**ii** 81°

**23**

**i**




**ii** 11.3 cm