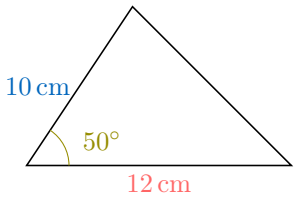
NON-RIGHT-ANGLED TRIANGLE TRIGONOMETRY

A AREA OF A TRIANGLE USING TWO SIDES AND THE INCLUDED ANGLE

A.1 FINDING AREA OF TRIANGLES USING TWO SIDES AND THE INCLUDED ANGLE

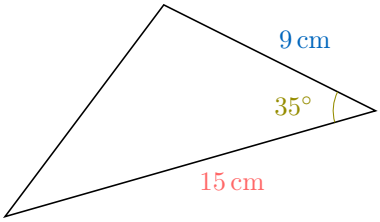
Ex 1: For the triangle below :



calculate the area (round your answer to the nearest integer).

$\square$ cm^2

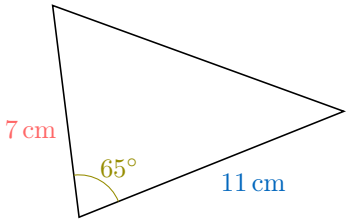
Ex 2: For the triangle below :



calculate the area (round your answer to the nearest integer).

$\square$ cm^2

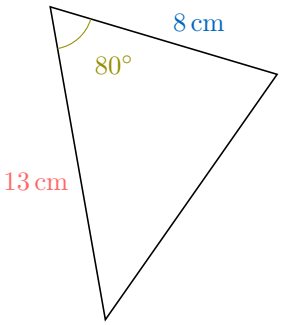
Ex 3: For the triangle below :



calculate the area (round your answer to the nearest integer).

$\square$ cm^2

Ex 4: For the triangle below :

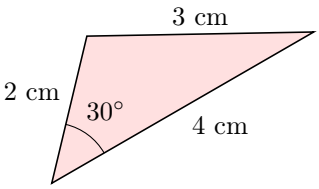


calculate the area (round your answer to the nearest integer).

$\square$ cm^2

A.2 FINDING AREA OF TRIANGLES USING TWO SIDES AND THE INCLUDED ANGLE

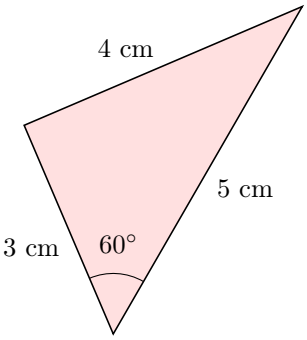
Ex 5: For the triangle below :



calculate the area (round your answer to 1 decimal place).

$\square$ cm^2

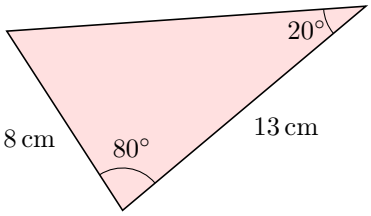
Ex 6: For the triangle below :



calculate the area (round your answer to 1 decimal place).

$\square$ cm^2

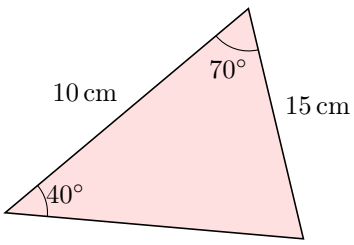
Ex 7: For the triangle below :



calculate the area (round your answer to the nearest integer).

$\square$ cm^2

Ex 8: For the triangle below :

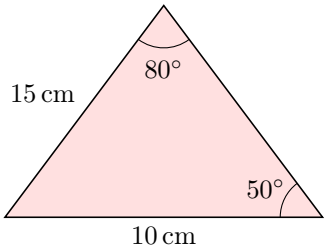


calculate the area (round your answer to the nearest integer).

$\square$ cm^2

A.3 FINDING AREA OF TRIANGLES

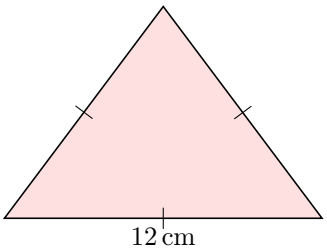
Ex 9: For the triangle below :



calculate the area (round your answer to the nearest integer).

$\square$ cm^2

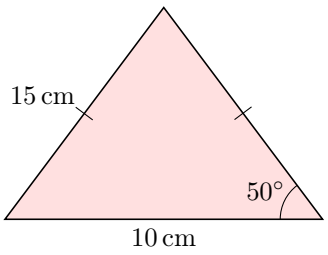
Ex 10: For the triangle below :



calculate the area (round your answer to the nearest integer).

$\square$ cm^2

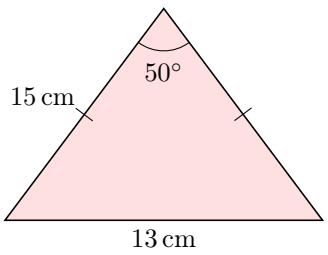
Ex 11: For the triangle below :



calculate the area (round your answer to the nearest integer).

$\square$ cm^2

Ex 12: For the triangle below :



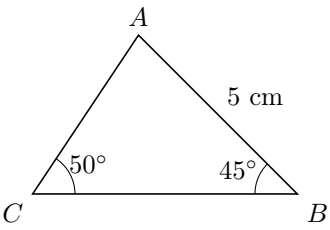
calculate the area (round your answer to the nearest integer).

$\square$ cm^2

B LAW OF SINES

B.1 FINDING SIDE LENGTHS: LEVEL 1

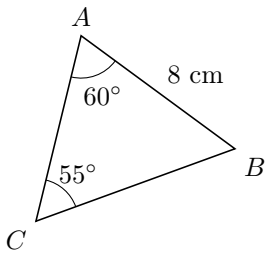
Ex 13: For the triangle



, find the length of segment $\overline{AC}$.

$AC =$ $\square$ cm (rounded to 1 decimal place)

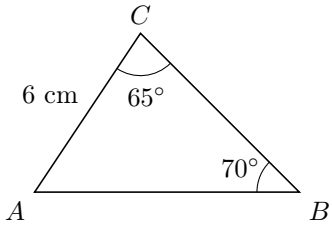
Ex 14: For the triangle below :



find the length of segment $\overline{BC}$.

$BC =$ $\square$ cm (rounded to 1 decimal plBCe)

Ex 15: For the triangle below :

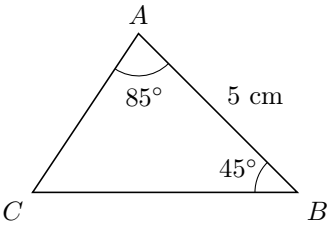


find the length of segment $\overline{AB}$.

$AB =$ $\square$ cm (rounded to 1 decimal place)

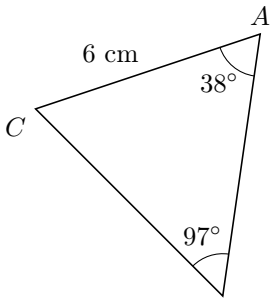
B.2 FINDING SIDE LENGTHS: LEVEL 2

Ex 16: For the triangle



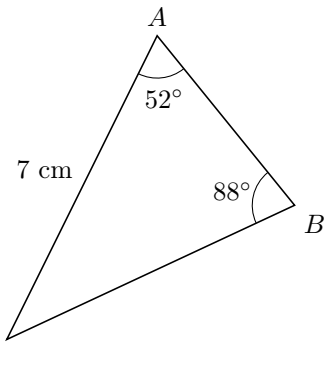
, find the length of segment $\overline{AC}$.

$AC =$ $\square$ cm (rounded to 1 decimal place)



Ex 17: For the triangle , find the length of segment $\overline{AB}$.

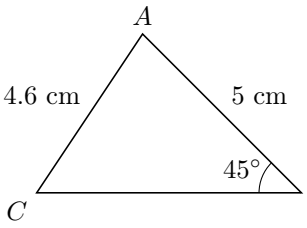
$AB =$ ☐ cm (rounded to 1 decimal place)



Ex 18: For the triangle , find the length of segment $\overline{AB}$.

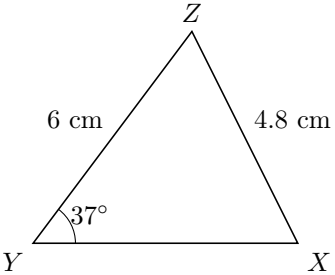
$AB =$ ☐ cm (rounded to 1 decimal place)

B.3 FINDING ANGLES



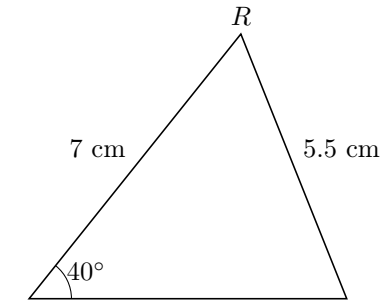
Ex 19: For the triangle , find the angle $\angle ACB$.

$\angle ACB =$ ☐° (rounded to nearest integer)



Ex 20: For the triangle , find the angle $\angle YXZ$.

$\angle YXZ =$ ☐° (rounded to nearest integer)

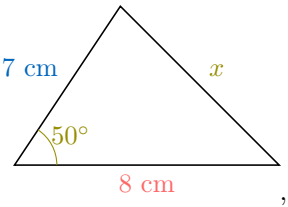


Ex 21: For the triangle , find the angle $\angle QPR$.

$\angle QPR =$ ☐° (rounded to nearest integer)

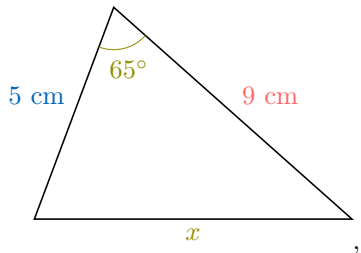
C LAW OF COSINES

C.1 FINDING SIDE LENGTHS



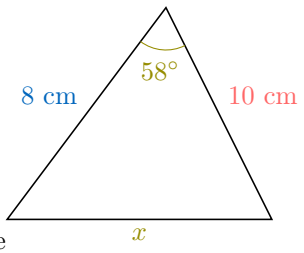
Ex 22: For the triangle , find side x.

$x =$ ☐ cm (rounded to 1 decimal place)



Ex 23: For the triangle , find side x.

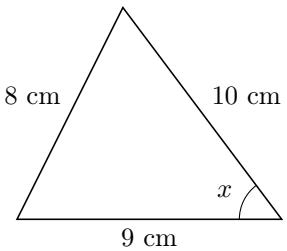
$x =$ ☐ cm (rounded to 1 decimal place)



Ex 24: For the triangle , find side x.

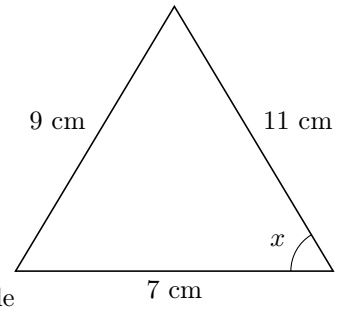
$x =$ ☐ cm (rounded to 1 decimal place)

C.2 FINDING ANGLES



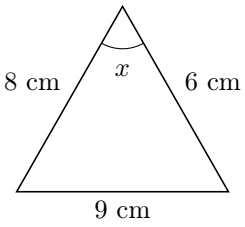
Ex 25: For the triangle , find the measure of angle x.

$x =$ ☐° (rounded to the nearest integer)



Ex 26: For the triangle , find the measure of angle x.

$x =$ ☐° (rounded to the nearest integer)



Ex 27: For the triangle , find the measure of angle x.

$x =$ ☐° (rounded to the nearest integer)

D SOLVING REAL-WORLD PROBLEMS USING SINE AND COSINE LAWS

D.1 SOLVING CONTEXTUAL TRIANGLE PROBLEMS

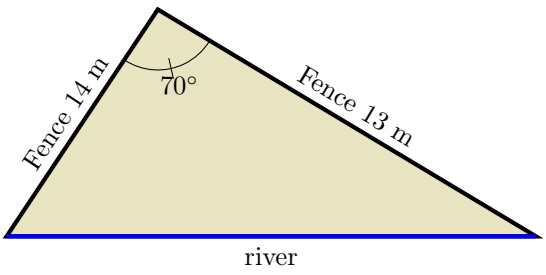
Ex 28: A triangular field is bordered by two fences and a straight river.
Find:

1. the area of the field

   Area = ☐ m^2 (rounded to the nearest integer)

2. the length of the riverbank

   Length = ☐ m (rounded to the nearest integer)



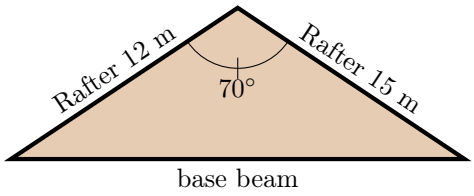
Ex 29: A triangular roof is to be painted. It is bounded by two rafters and a base beam.
Find:

1. the area of the roof

   Area = ☐ m^2 (rounded to the nearest integer)

2. the cost to paint the roof at \$10 per m^2

   Cost = ☐ \$



Ex 30: A triangular garden is bounded by two paths and a straight fence.
Find:

1. the area of the garden

   Area = ☐ m^2 (rounded to the nearest integer)

2. the cost to seed the garden at \$2.5 per m^2

   Cost = ☐ \$ (rounded to the nearest integer)