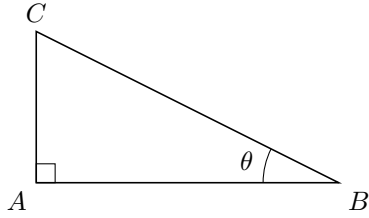


TRIGONOMETRY

A RIGHT-ANGLED TRIANGLE

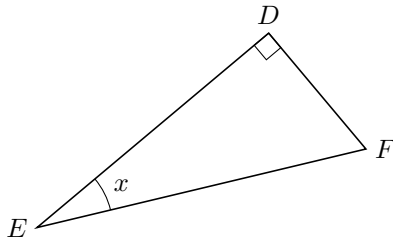
A.1 IDENTIFYING TRIANGLE SIDES

MCQ 1: In the triangle below, identify the adjacent side to the angle θ :



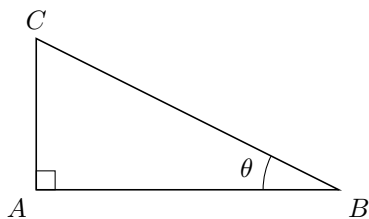
- ☐ \overline{AB}
☐ \overline{AC}
☐ \overline{BC}

MCQ 2: In the triangle below, identify the hypotenuse relative to the angle x :



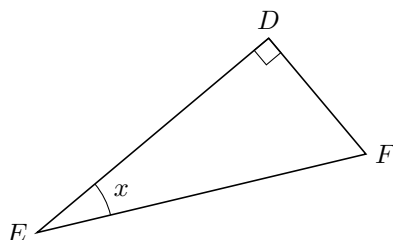
- ☐ \overline{DE}
☐ \overline{DF}
☐ \overline{EF}

MCQ 3: In the triangle below, identify the opposite side to the angle θ :



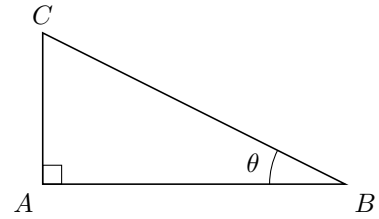
- ☐ \overline{AB}
☐ \overline{AC}
☐ \overline{BC}

MCQ 4: In the triangle below, identify the opposite side to the angle x :



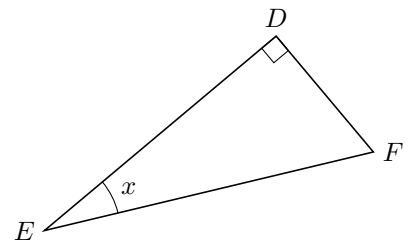
- ☐ \overline{DE}
☐ \overline{DF}
☐ \overline{EF}

MCQ 5: In the triangle below, identify the hypotenuse relative to the angle θ :



- ☐ \overline{AB}
☐ \overline{AC}
☐ \overline{BC}

MCQ 6: In the triangle below, identify the adjacent side to the angle x :

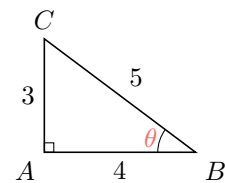


- ☐ \overline{DE}
☐ \overline{DF}
☐ \overline{EF}

B TRIGONOMETRIC FUNCTIONS

B.1 CALCULATING TRIGONOMETRIC RATIOS

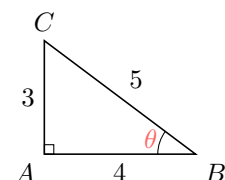
Ex 7:



Calculate $\cos(\theta)$.

$$\cos(\theta) = \boxed{}$$

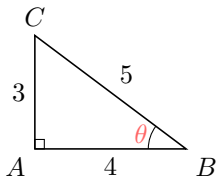
Ex 8:



Calculate $\sin(\theta)$.

$\sin(\theta) = \square$

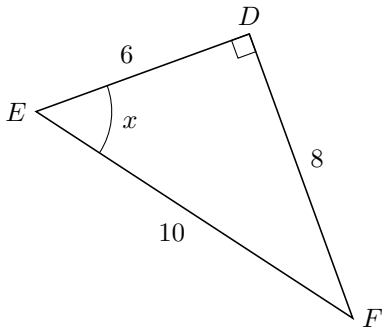
Ex 9:



Calculate $\tan(\theta)$.

$\tan(\theta) = \square$

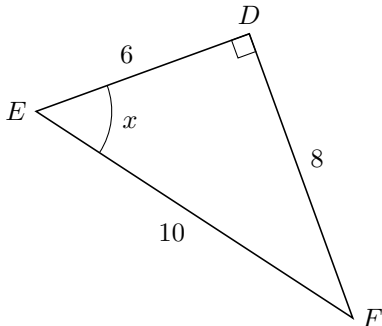
Ex 10:



Calculate $\sin(x)$.

$\sin(x) = \square$

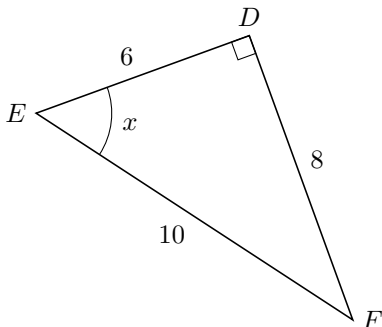
Ex 11:



Calculate $\tan(x)$.

$\tan(x) = \square$

Ex 12:

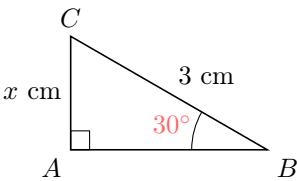


Calculate $\cos(x)$.

$\cos(x) = \square$

B.2 CALCULATING SIDE LENGTHS

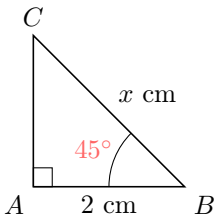
Ex 13:



Calculate x .

$x \approx \square$ cm (round to 2 decimal places)

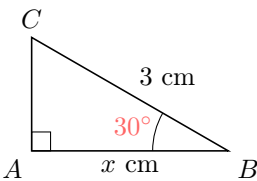
Ex 14:



Calculate x .

$x \approx \square$ cm (round to 2 decimal places)

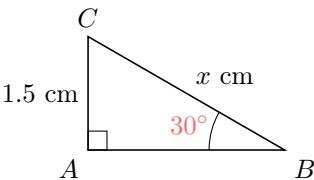
Ex 15:



Calculate x .

$x \approx \square$ cm (round to 2 decimal places)

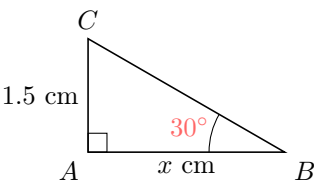
Ex 16:



Calculate x .


$x \approx \square$ cm (round to 2 decimal places)

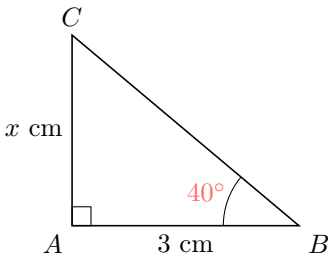
Ex 17:



Calculate x .

$x \approx \boxed{} \text{ cm (round to 2 decimal places)}$


Ex 18: 





Calculate x .

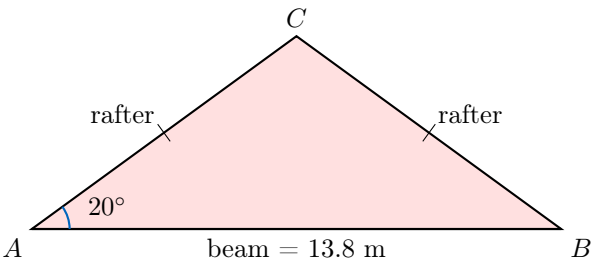
$x \approx \boxed{} \text{ cm (round to 2 decimal places)}$

B.3 SOLVING PROBLEMS

Ex 19:  A cyclist in France rides up a long incline with an average rise of 6° . If he rides for 6.2 km, how far has he climbed vertically?


Ex 20:  The lamp in a lighthouse is 64 m above sea level. The angle of depression from the lamp to a fishing boat is 11° . How far horizontally is the boat from the lighthouse?

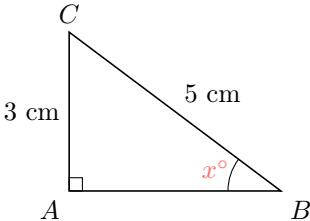
Ex 21:  For the triangular roof truss illustrated, find the length of a rafter if the beam is 13.8 m and the pitch is 20° .



C INVERSE TRIGONOMETRIC FUNCTIONS


C.1 CALCULATING ANGLES

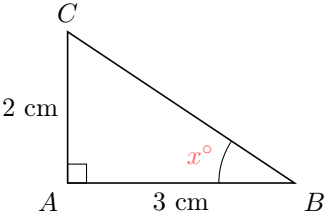
Ex 22: 



Calculate the angle x° .

$x^\circ \approx \boxed{}^\circ \text{ (round to 1 decimal place)}$

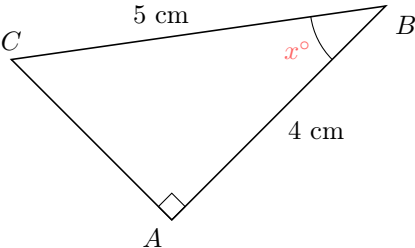
Ex 23: 



Calculate the angle x° .


$x^\circ \approx \boxed{}^\circ \text{ (round to 1 decimal place)}$

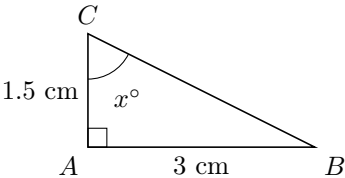
Ex 24: 



Calculate the angle x° .


$x^\circ \approx \boxed{}^\circ \text{ (round to 1 decimal place)}$

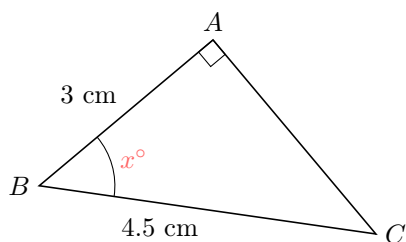
Ex 25: 



Calculate the angle x° .


$$x^\circ \approx \boxed{}^\circ \text{ (round to 1 decimal place)}$$

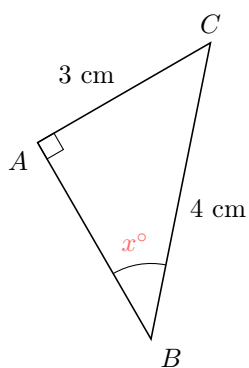
Ex 26: 



Calculate the angle x° .

$$x^\circ \approx \boxed{}^\circ \text{ (round to 1 decimal place)}$$

Ex 27: 



Calculate the angle x° .

$$x^\circ \approx \boxed{}^\circ \text{ (round to 1 decimal place)}$$