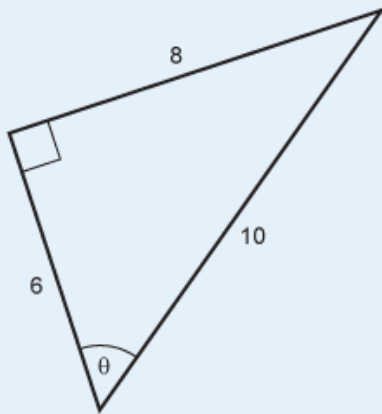


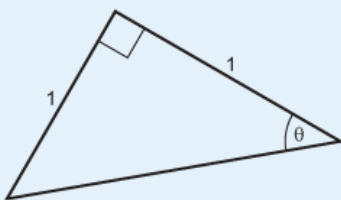
Select the option that gives the sine of the angle  $\theta$  in the following diagram.



Select one:

- $\frac{4}{3}$
- $\frac{4}{5}$
- $\frac{5}{4}$
- $\frac{5}{3}$
- $\frac{3}{5}$
- $\frac{3}{4}$

Consider the following triangle (not drawn to scale).



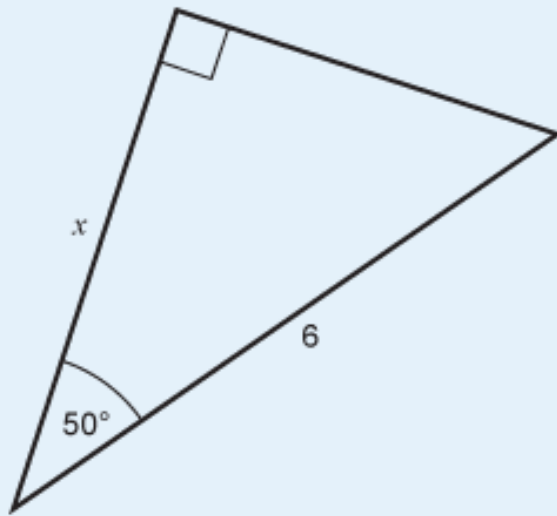
Select the option that is the value of the angle marked  $\theta$ .

(Hint: you should not need to calculate anything as the given triangle is one of the standard triangles used to calculate useful known values of sine, cosine and tangent.)

Select one:

- $0^\circ$
- $90^\circ$
- $45^\circ$
- $30^\circ$
- $60^\circ$

Calculate the length marked  $x$  in the following triangle.

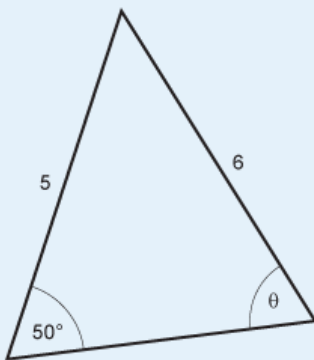


Enter your answer to two significant figures in the box below.

(Your answer should be a number.)

Answer:

Calculate, in degrees, the angle marked  $\theta$  in the following triangle (this triangle has purposely not been drawn to scale).

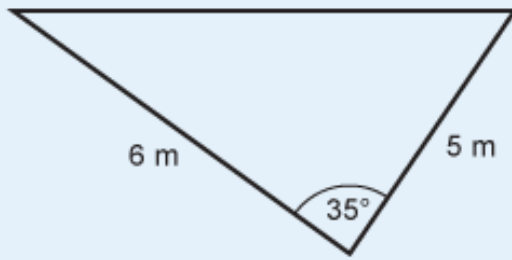


Enter your answer, rounded to the nearest degree, in the box below.

(Your answer should be a number, without units.)

Answer:

Calculate the area of the following triangle.



Enter your answer in square metres rounded to one decimal place in the box below.

(Your answer should be a number, without units.)

Answer:

Calculate the area of a sector of a circle with radius 2 m that subtends an angle  $\frac{\pi}{3}$ .

Enter your answer in square metres rounded to two significant figures in the box below.

(Your answer should be a number, without units.)

Answer:

A large melting snowball decreases its mass by 14 percent every hour. If it starts with a mass of  $A$  kg, which of the following is the correct formula connecting the current mass,  $M$ , with time  $t$  in hours.

Select one:

- $t = M \times A^{0.86}$
- $M = A \times 14 \times t$
- $M = A \times 0.86^t$
- $A = M \times 0.86^t$
- $M = A \times 0.86 \times t$
- $M = A \times 14^t$