



Programme 7 Worksheet 1: Programme Questions

Answer the following questions while you watch the programme.

1. What is the working height of the ladder against the fire-fighters' training tower (the height it reaches up the building)?

2. Write down the symbol often used to label the angle being worked with in a right-angled triangle.

3. In Katie's scale drawing of the ladder against the training tower, what is the length of the hypotenuse?

4. Complete the general equation for the sine ratio: 'sin = ...'

5. In the ladder problem, where Katie finds the height the ladder can reach, what does she key into her calculator?

6. What colour is the wet suit worn by the water-skier Rachel Crosland?

7. What are the set values of the angle and take-off height for water-ski jumps?

8. Sketch the triangle in the 'Tick or Trash' section.

9. Write down the angles of the three ramps that Tammi tests.

10. What is the length of the ramp that Katie measures with her tape measure?

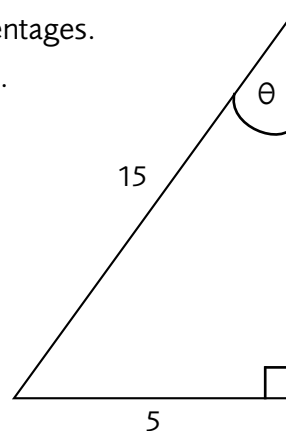


Programme 7 Worksheet 2: Tick or Trash

Here are some questions and answers (by Students A and B) on percentages.
Decide which answers to Tick (correct) and which to Trash (incorrect).
Give reasons.

Question 1

In this triangle, find the angle θ to the nearest degree.



Student A Answer

$$\begin{aligned} \sin \theta &= \frac{5}{15} \\ &= 0.3\dot{3} \\ \theta &= \sin^{-1} 0.3\dot{3} \\ &= 19.47^\circ \\ &= 19^\circ \end{aligned}$$

Student B Answer

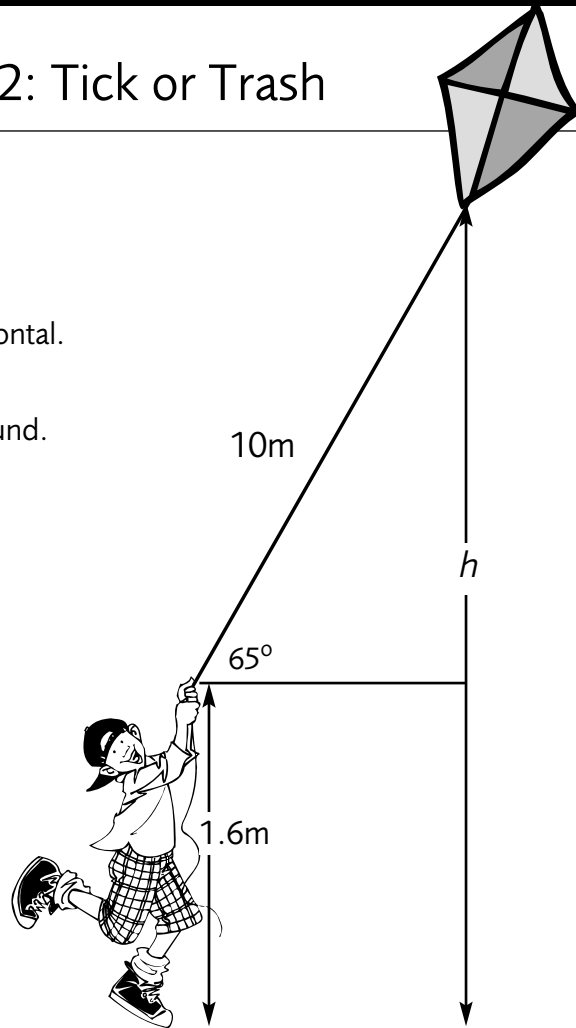
$$\begin{aligned} \frac{\text{opp}}{\text{hyp}} &= \sin \theta \\ \theta &= \sin^{-1} \frac{15}{5} \\ &= \sin^{-1} 3 \\ &= 0.052 \\ &= 0.05^\circ \end{aligned}$$



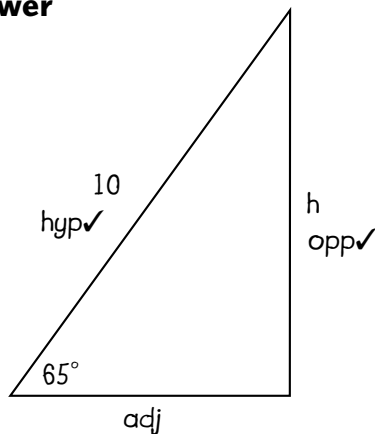
Programme 7 Worksheet 2: Tick or Trash

Question 2

A child flying a kite holds the end of the string at a height of 1.6m above the ground. The string makes an angle of 65° with the horizontal. If the kite string is 10m long, work out the height h of the kite above the ground.



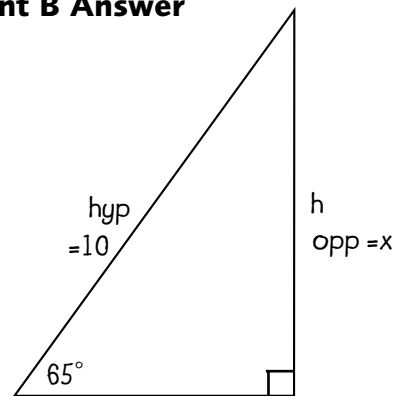
Student A Answer



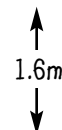
$$\sin 65 = \frac{h}{10}$$

$$\begin{aligned} h &= 10 \sin 65 \\ &= 9.063 \\ &= 9 \end{aligned}$$

Student B Answer



$$\begin{aligned} x &= 10 \sin 65^\circ \\ &= 10 \times 0.9063 \\ &= 9.063 \\ &= 9.1m \end{aligned}$$



$$\begin{aligned} \text{total height } h &= 9.1 + 1.6 \\ &= 10.7m \end{aligned}$$



Programme 7 Worksheet 3: Exam Practice Questions (Edexcel)

Question 1

National Curriculum Reference: S2f

June 1998

Paper 3

The diagram represents a rectangle which is 6 cm long.
A diagonal makes an angle of 23° with a 6 cm side.

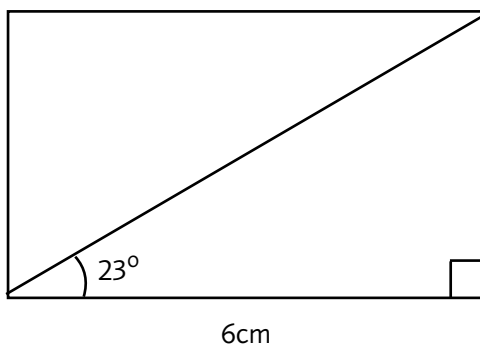


Diagram **NOT** accurately drawn

Calculate the length of a diagonal.
Give your answer correct to 3 significant figures.

(3 marks)

[3]

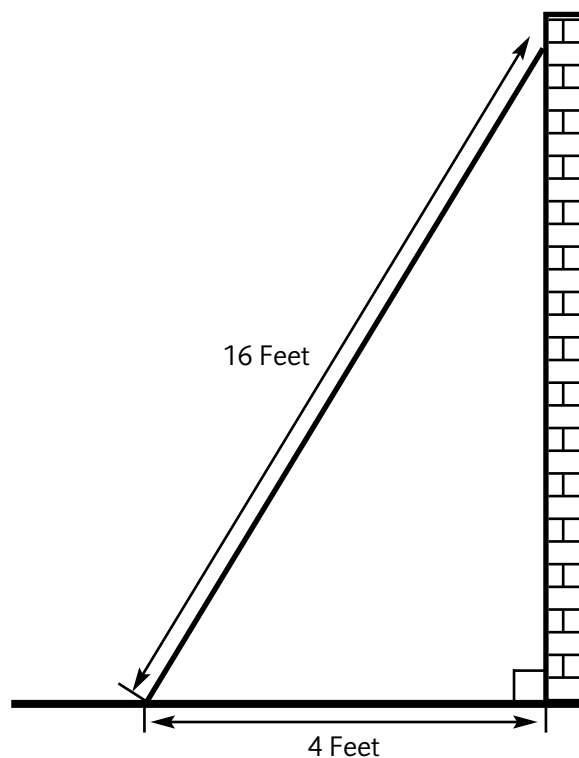
Question 2

National Curriculum Reference: S2e

November 1995

Paper 1

Sidney places the foot of his ladder on horizontal ground and the top against a vertical wall.
The ladder is 16 feet long.
The foot of the ladder is 4 feet from the base of the wall.



(a) Work out how high up the wall the ladder reaches.
Give your answer to 3 significant figures.

(b) Work out the angle the base of the ladder makes with the ground.
Give your answer to 3 significant figures.

[6]



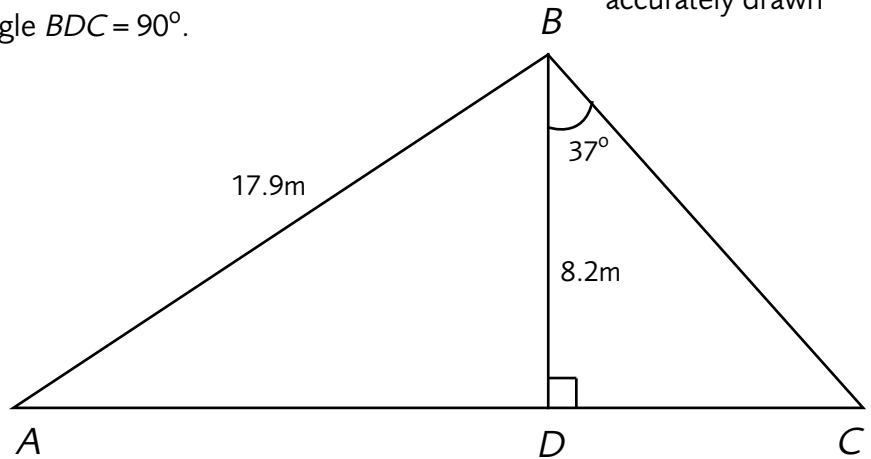
Programme 7 Worksheet 3: Exam Practice Questions (Edexcel)

Question 3

National Curriculum Reference: S2f November 1997 Paper 3

In the diagram $AB = 17.9$ m,
 $BD = 8.2$ m, angle $CBD = 37^\circ$ and angle $BDC = 90^\circ$.

Diagram **NOT**
 accurately drawn



ADC is a straight line.

- (a)** Calculate the length of DC .
 Give your answer, in metres, correct to 3 significant figures.

- (b)** Calculate the size of angle DAB .
 Give your answer correct to 1 decimal place.

[6]



Programme 7 Worksheet 3: Exam Practice Questions (Edexcel)

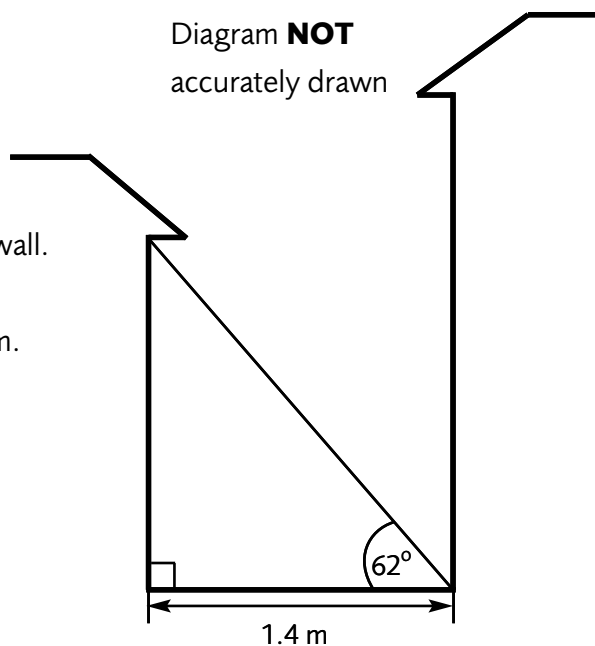
Question 4

National Curriculum Reference: S2f June 1997 Paper 3

The diagram shows a house and a garage on level ground.

Diagram **NOT** accurately drawn

A ladder is placed with one end at the bottom of the house wall. The top of the ladder touches the top of the garage wall. The distance between the garage wall and the house is 1.4 m. The angle the ladder makes with the ground is 62° .

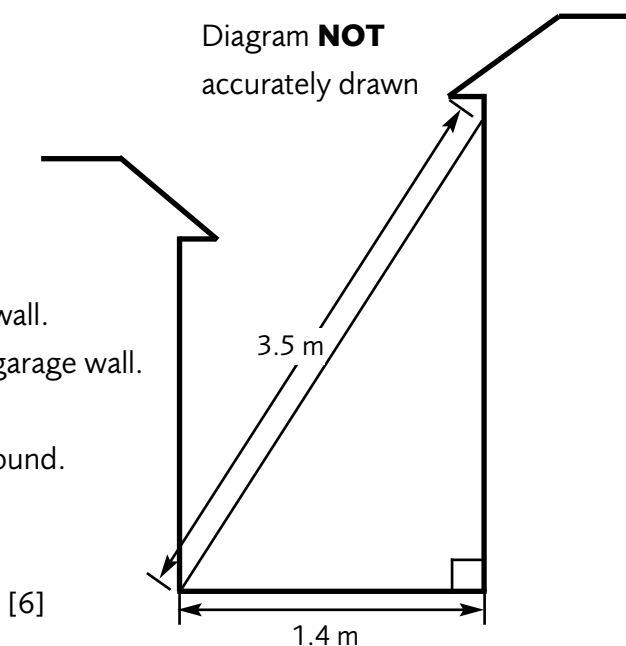


- (a) Calculate the height of the garage wall.
Give your answer correct to 3 significant figures.

A ladder of length 3.5m is then placed against the house wall. The bottom of this ladder rests against the bottom of the garage wall.

Diagram **NOT** accurately drawn

- (b) Calculate the angle that this ladder makes with the ground.
Give your answer correct to 1 decimal place.



[6]



Programme 7 Worksheet 3: Exam Practice Questions (Edexcel)

Question 5

National Curriculum Reference: S2e

June 1999

Paper 4

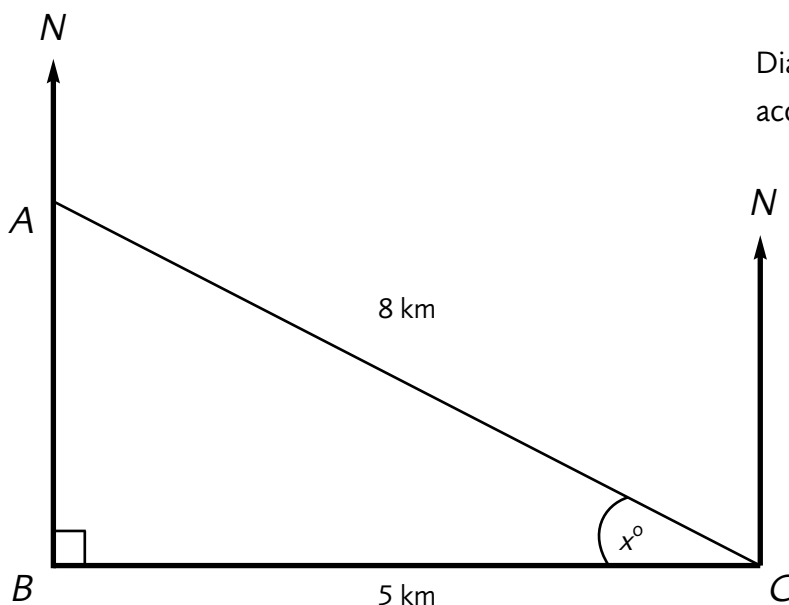


Diagram **NOT** accurately drawn

The diagram shows the positions of three telephone masts A , B and C .

Mast C is 3 kilometres due East of Mast B .

Mast A is due North of Mast B and 8 kilometres from Mast C .

(a) Calculate the distance of A from B .

Give your answer in kilometres, correct to 3 significant figures.

(3 marks)

(b) i) Calculate the size of the angle marked x° .

Give your angle correct to one decimal place.

ii) Calculate the bearing of A from C .

Give your answer correct to one decimal place.

iii) Calculate the bearing of C from A .

Give your bearing correct to one decimal place.

(5 marks)

[8]

Total =29