

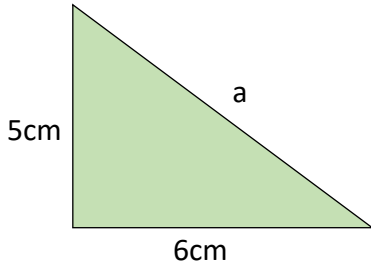


Pythagoras:

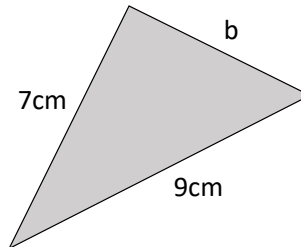
Basic Skills

Section 1: Calculating missing lengths

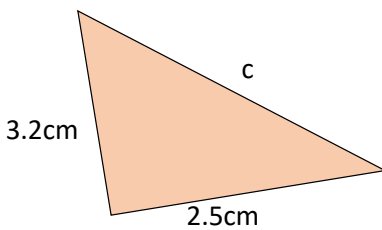
1.



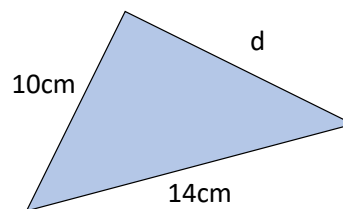
2.



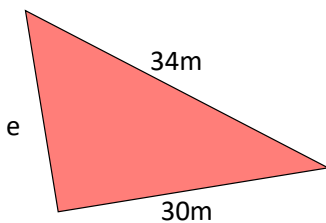
3.



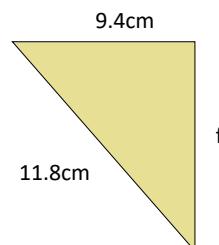
4.



5.



6.



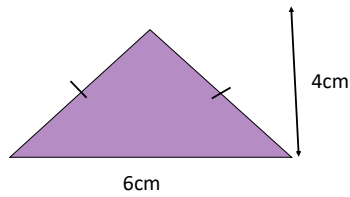
7. The width of a new TV is 38 inches and the height is 26 inches, calculate the diagonal length of the TV to one decimal place.

8. Two planes leave an airport at the same time. The first travels north for 230km. The second travels East for 180km. At this point how far away are the planes from each other? Give your answer to the nearest 10km.

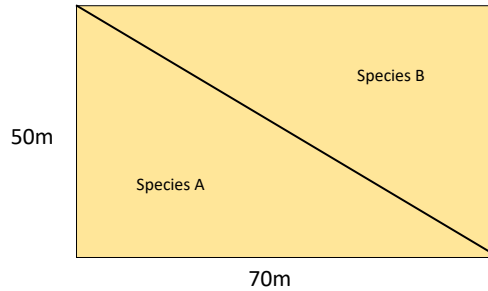


Section 2: Context Questions

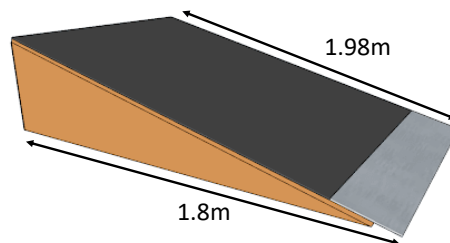
1. **Non-Calculator:** Calculate the perimeter of the triangle below.



2. At a zoo an enclosure is cut in two in order to separate two different species of animal, using the diagram shown below find the length of fence required to separate the two species.

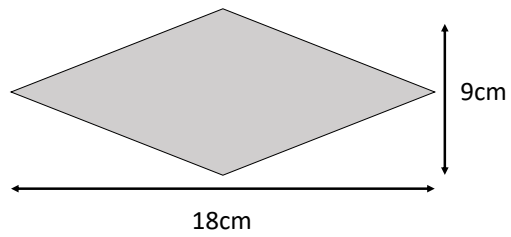


3. During the last part of a Duke of Edinburgh expedition. A group of pupils walk South for 3 hours at a speed of 8kmph. They then walk East for 1 hour at the same speed. What is the shortest distance the pupils could have walked?
4. A new access ramp is built for a school as shown below.



- a) Calculate the vertical height of the access ramp, give your answer to the nearest **centimetre**.
- b) Calculate the gradient of the ramp.
5. A plane flies South for 120km. It then turns and flies West. After this it is 200km from where it started, how far did the plane fly West?
6. A car travels West for 3 hours at a Speed of 40mph. It then travels North for 3 hours. At this point the car is 180 miles from where it started (as the crow flies).
- a) Calculate how far the car travelled North. Give your answer to the nearest mile.
- b) Calculate the speed the car travelled.

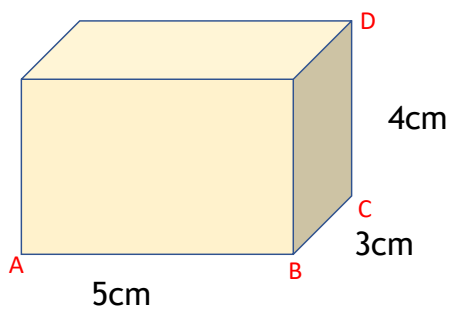
7. Calculate the perimeter of the rhombus below.



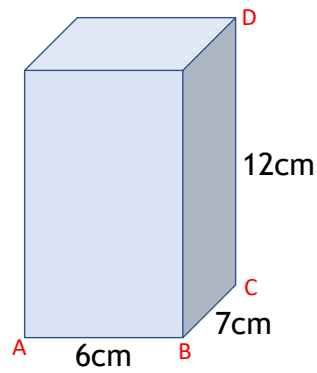
Section 3: 3D Pythagoras

For each of the following find the length of A to D.

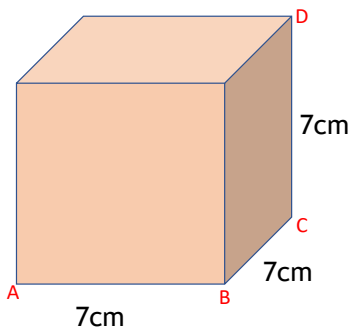
1.



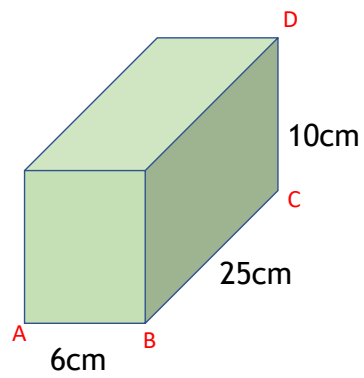
2.



3.

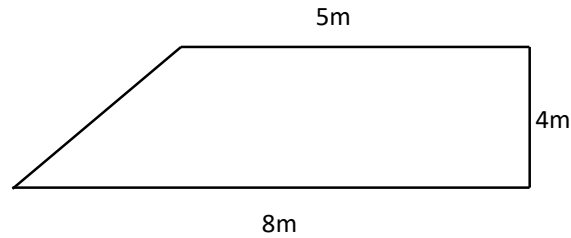


4.

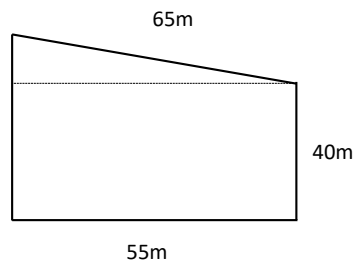


Section 4: Pythagoras, Perimeter and Area

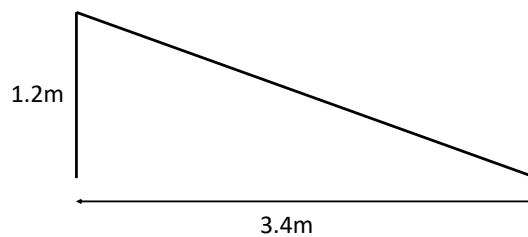
1. **Non-Calculator:** At a park in Glasgow a small area of trees are being cordoned off to ensure the habitat of the area remains safe. A diagram of the area is shown below.



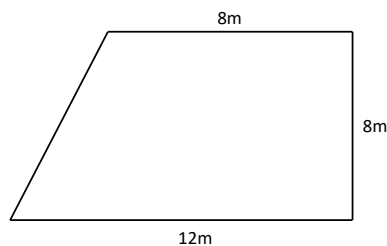
- a) Calculate the perimeter of fence required
- b) The special fencing required is sold in rolls of 5m. If it costs £27.99 for each roll then how much would it cost for fencing around the entire area.
2. An extension to a playground is being made, the drawing is shown below.



- a) Calculate the area of the extension to the nearest m^2 .
- b) It costs £0.60 for every m^2 of gravel, calculate the cost to put gravel over the entire extension.
3. A new ramp is being built. It consists of a vertical side and a long slanted side. Below is the length of the vertical side and also the horizontal distance of the ramp.



4. The Patterson's are building a new kitchen. Below is a drawing of their Kitchen design.



- a) Calculate the perimeter of the room
- b) Calculate the area of the room
- c) It costs £2.50 for every m^2 of the room to put flooring in, calculate the cost of the flooring.

