

26.



Sophia works as a secretary and earns £15 per hour.

Her overtime is paid at **time and a half** and last week she worked an extra 9 hours.

How much was he paid for her overtime work ?

27. Jeremy is a primary teacher. His **gross** monthly pay is £1860.

His monthly deductions are Income Tax - £324,

National Insurance - £109 and Graduated Pension - 5% of his gross pay.

What is Jeremy's **net** monthly pay ?

28. a A train covers 340 miles in 4 hours. What is the train's **average speed** ?

b A satellite travels round the earth at 8.5 km/second.

How far will it travel in 9 seconds at this speed ?

c A spaceship travels at a steady speed of 2500 km/hr.

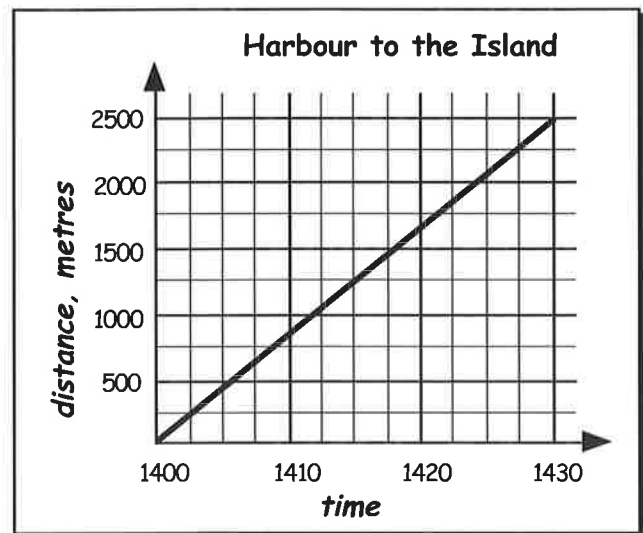
How many **days** will it take it to cover a distance of 3 million km ?



29. Shown is a graph indicating how far a boat travels from a harbour to an island.

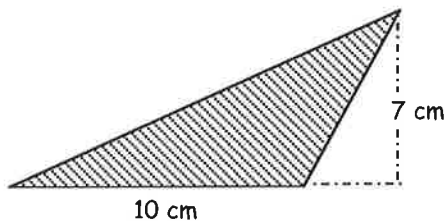
Calculate the **average speed** of the boat.

(Give your answer in km per hr).

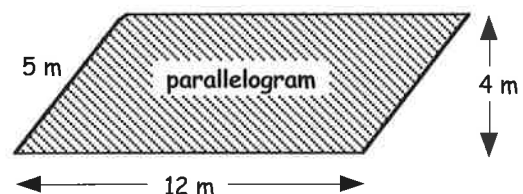


30. Calculate the **area** of each of these shapes :-

a



b



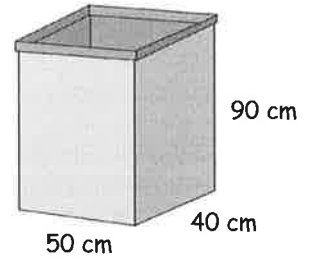
31. Calculate the **circumference** of a dustbin lid which has a **radius** of 50 centimetres.

32.

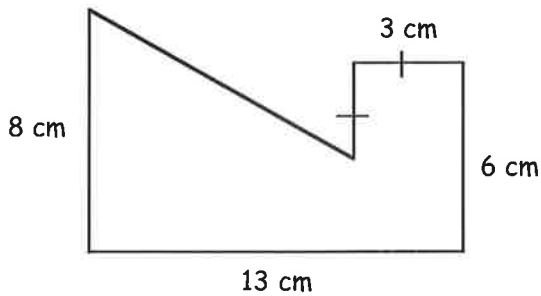


The **diameter** of the circular garden is 20 metres.
Calculate the **area** of the garden.

33. Calculate the **capacity** (in litres) of this cuboidal container.



34.



Calculate the **area** of this shape.

35. Write the next **two** numbers in the following sequences :-

- a 243, 232, 221, 210, ..., ... b 3, 10, 17, 24, ..., ... c 2, 3, 6, 11, 18, ..., ...

36. This table shows the height of a tree over a 5 year period.

No. of day's (d)	1	2	3	4	5
Height in cm (H)	2	5	8	11	14

Use the table to devise a **formula** connecting H and d .



37. Simplify :-

a $7x - 4y - 3x + y$

b $7a \times 3b$.

38. Multiply out brackets :- a $4m(2m - 5n)$

b $-6(4x - 6y)$.

39. Simplify fully :- $12t + 7s - 4(t - 3s)$.

40. If $x = 19$, $y = 4$ and $z = -2$, find the value of $\frac{x - y}{3z}$.

41. Solve :-

a $2x - 7 = 17$

b $4x + 1 = 2x + 21$

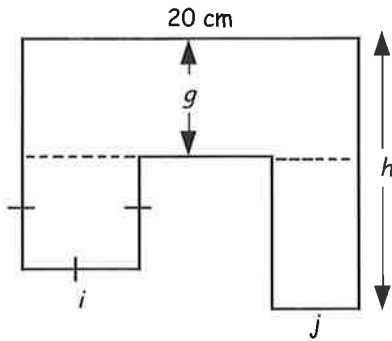
c $7(3x - 2) = x + 6$

d $\frac{1}{2}x - 3 = 11$.

42. Solve each inequality :- a $7x - 3 > 25$

b $\frac{1}{5}x + 1 \leq 15$.

43.

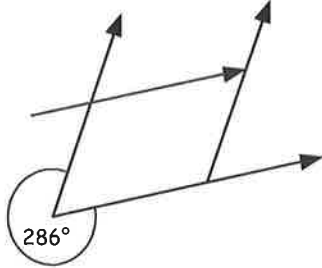


a Write down a **formula** for the **area (A)** of this shape in terms of g, h, i and j .

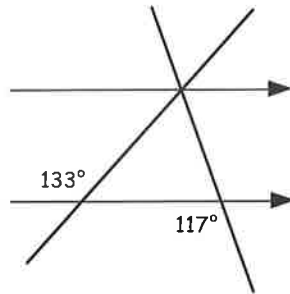
b **Evaluate** the formula given :-
 $g = 8, h = 15, i = 6$ and $j = 5$.

44. Copy each diagram below and fill in ALL the missing angles :-

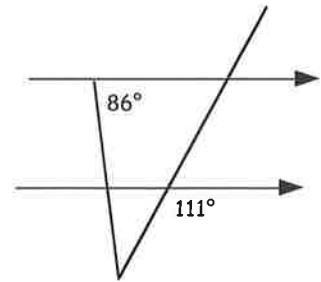
a



b



c



45. What is the compass direction for the **3 figure bearing** 315° ?

46. A tank is driven on a bearing of 070° . The driver notices a jeep heading directly towards him. On what bearing must the jeep be heading ?

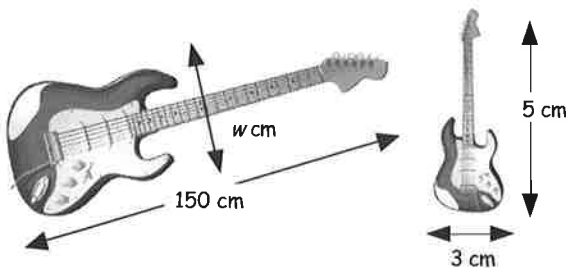
47. This picture of a building has a scale of **1 cm represents 5 metres**.

In the picture, the building had a height of 4.5 centimetres.

What was the **real** height of the building ?



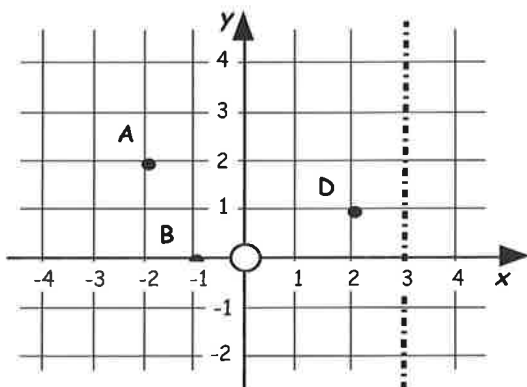
48.



Shown is a guitar and a model of it.

Calculate the **scale factor** and use it to determine the **width (w cm)** of the actual guitar.

49.



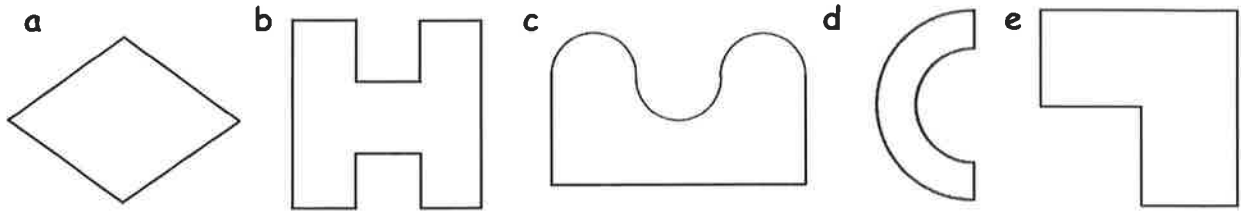
a Write down the coordinates of point **A**.

b Write down the y coordinate of a 4th point **C(3, ?)** such that **ABCD** is a parallelogram.

c Point **A** is **reflected** over the dotted line to point **A'**.

Write down the coordinates of **A'**.

50. Which of these shapes would **tile** a flat surface? (Write **yes** or **no**).



51. Over a ten year period, the temperature was taken at noon on the 1st January.

5°C, 2°C, -1°C, 5°C, -2°C, 11°C, 8°C, 2°C, -5°C, 5°C.

- a What is the **range** of temperatures? b What is the **modal** temperature?
- c What is the **median** temperature? d What is the **mean** temperature?

52. Donny weighed 3 joints of meat and found the **mean** weight was 2.6 kg.

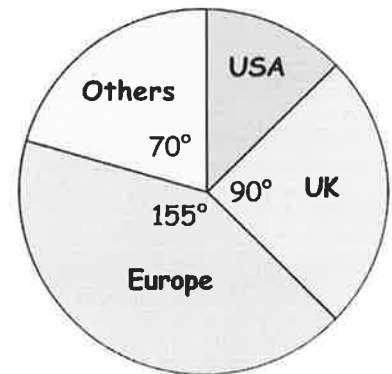
One joint weighed 1.9 kg and the second weighed 2.4 kg.

What must the weight of the 3rd joint have been?

53. A group of people at an airport were asked where they were flying to one day.

The **pie chart** shows where they were heading to.

- a What **fraction** of them answered "USA"?
- b If 2400 flyers were questioned, **how many** of them were flying off to the USA?



54. A football squad consists of 2 keepers, 8 defenders, 9 mid-fielders and 5 attackers.

If a player is chosen at random, what is the **probability** he is a defender?

55. Several people were asked if they had caught the flu last winter.

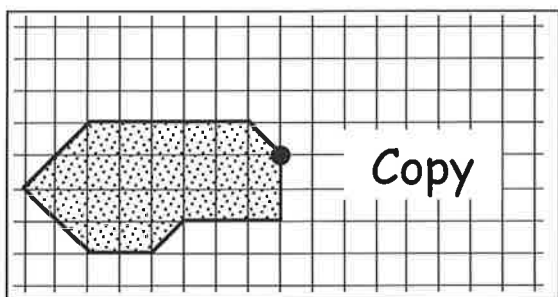
It was found that the probability of choosing one of them who had caught the flu was in fact 0.2.

Of those asked, 9 said they had had the flu.

How many had **not** caught the flu?



56.



Copy this shape and **rotate** it by a **half turn** around the dot.