S2 Revision
May Assessment

Armadale Academy

How to use this booklet:

There are questions on each topic that has been covered so far in the S1 mathematics course.

Next to each set of questions is a QR code which you can scan with your phone.

These QR codes will take you videos with explanations of how to answer the questions if you are unsure.

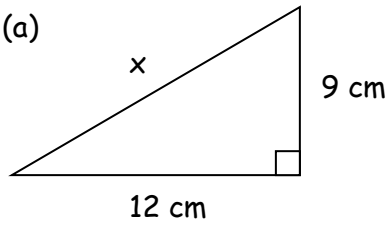
PYTHAGORAS' THEOREM

Video 1 - Pythagoras

Show all the steps of your working.

1. Calculate the length of the side x in each right-angled triangle.

(a)



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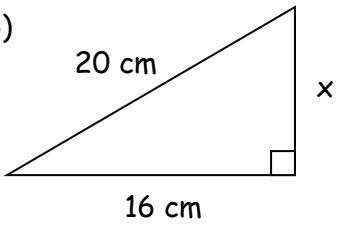

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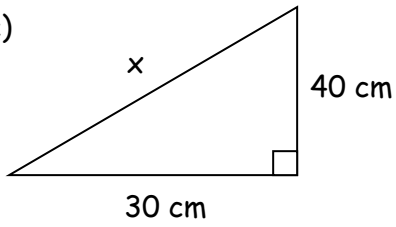

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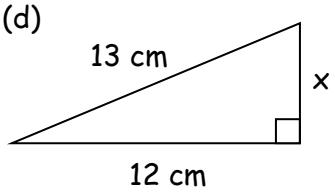

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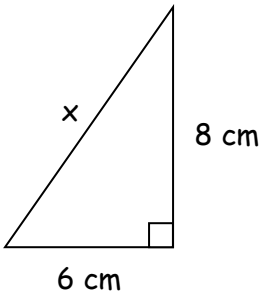

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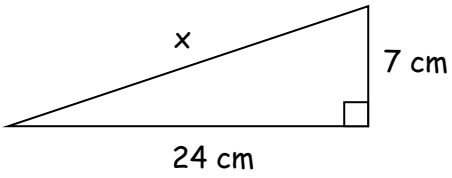

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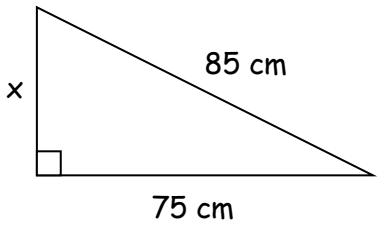

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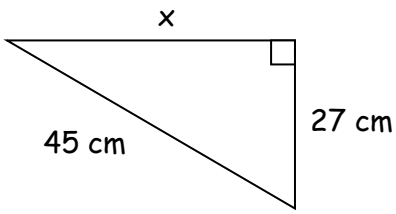
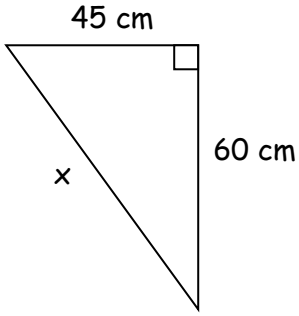
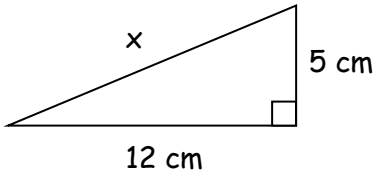


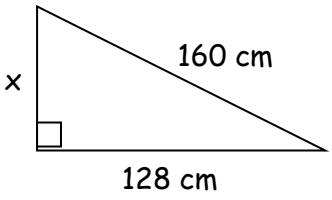
(i)



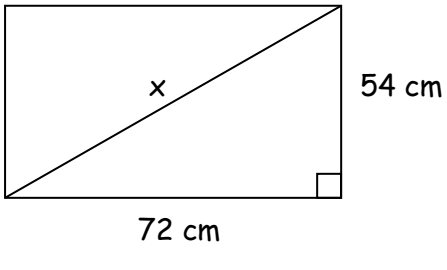
2. Calculate the length of this ramp.



3. Calculate the height of this triangular support.

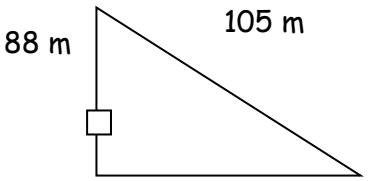


4. A black line runs diagonally from corner to corner on this rectangular flag. Calculate the length of the black line.

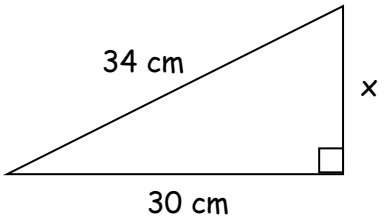


x

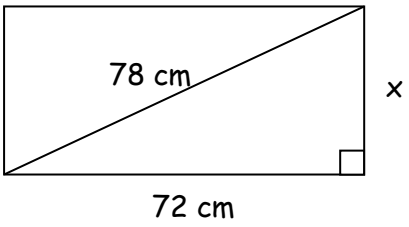
5. Three streets form a right-angled triangle as shown.
Calculate *x*.



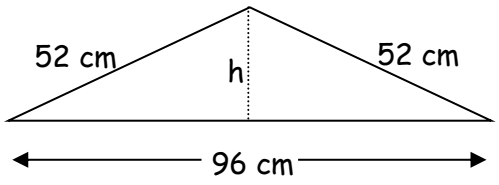
6. A bookend is in the shape of a right-angled triangle.
Calculate the height of the bookend.



7. Calculate the height of this rectangle.



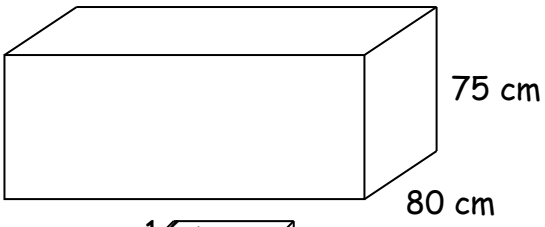
8. Calculate the height, h, of the isosceles triangle opposite.



VOLUME

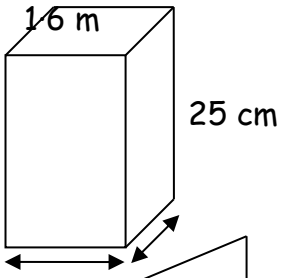
Show your working; you may use a calculator where necessary.

1. Use the formula $V = l \times b \times h$ to calculate the volume of this tank in **litres**.
(Remember that 1 litre = 1000 cm^3.)



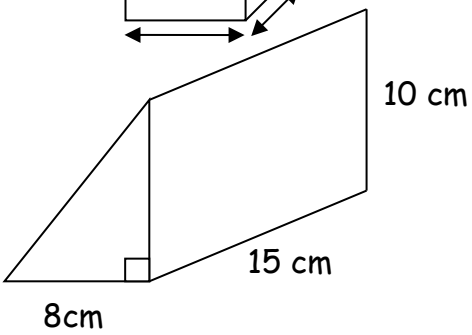
2. The carton shown opposite is in the shape of a cuboid with a **square base** and height 25 cm. The volume of the carton is 3600 cm^3.

Find the length of one side of the base.



Video 2 - Volume of cube/cuboid

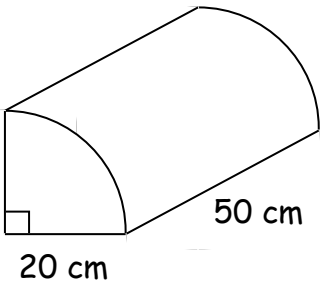
3. Use the formula $V = Al$ to calculate the volume of this triangular prism.



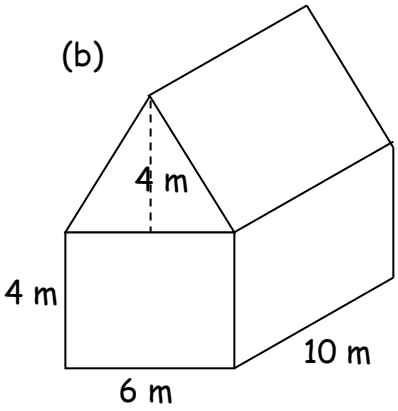
Video 3 - Volume of a Prism

4. Use the formula $V = Al$ to calculate the volume of each prism below.
(Calculate the area of the cross-section first.)

(a)



(b)



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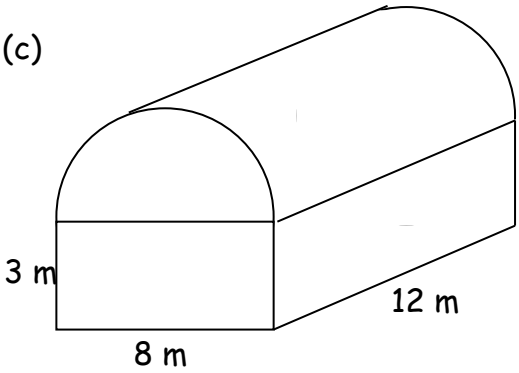
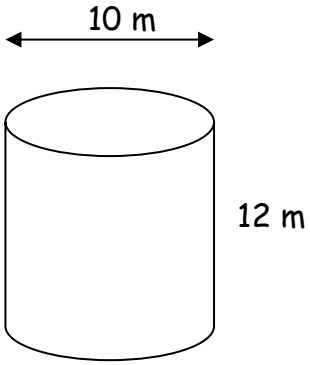


5. Use the formula $V = \pi r^2 h$ to calculate the volume of this cylinder.



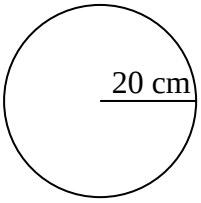
Video 4 - Volume of a Cylinder

The Area of a Circle

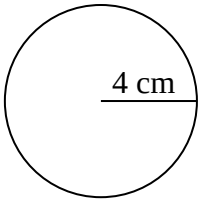
$$A = \pi r^2$$

Video 5 - Area of a circle

1. Calculate the area of a circle with **radius** 20 cm.

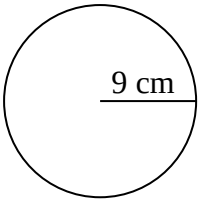


2.

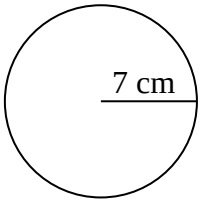


Calculate the area of a circle with **radius** 4 cm.

3. Calculate the area of a circle with **radius** 9 cm.



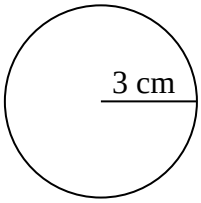
4.



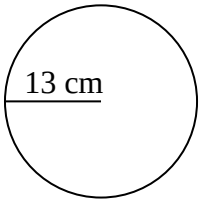
Calculate the area of a circle with **radius** 7 cm.

5. Calculate the area of each circle.

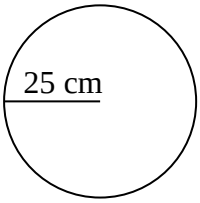
(a)



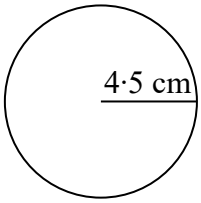
(b)



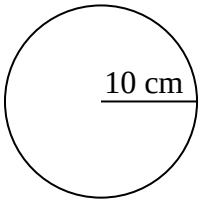
(c)



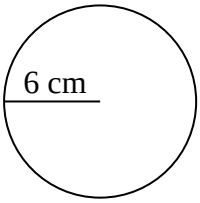
(d)



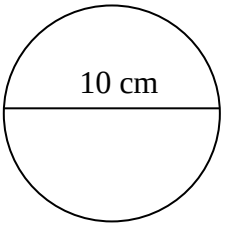
(e)

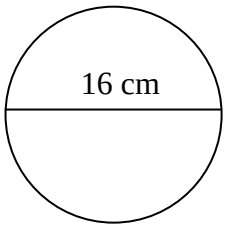


(f)



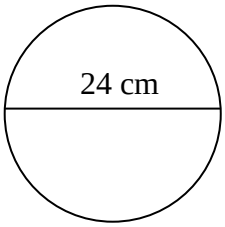
6. Calculate the area of a circle with **diameter** 10 cm (careful).



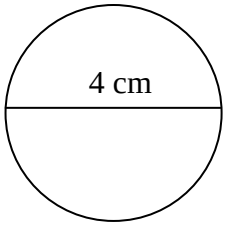
7. 

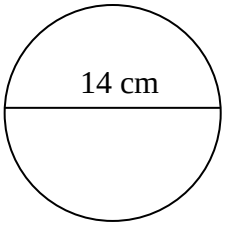
Calculate the area of a circle with **diameter** 16 cm.

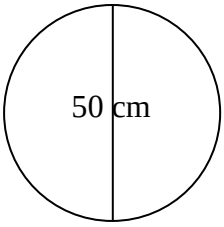
8. Calculate the area of this circle.

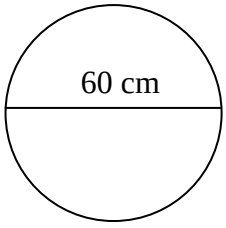


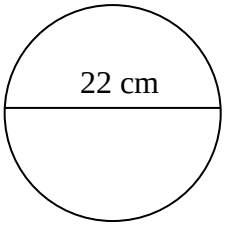
9. Calculate the area of each circle.

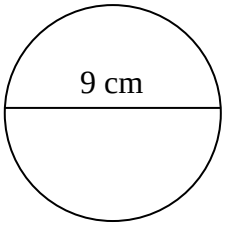
(a) 

(b) 

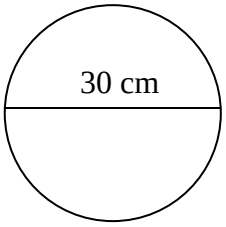
(c) 

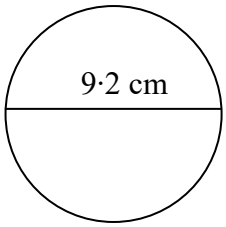
(d) 

(e) 

(f) 

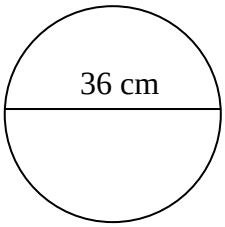
10. The **diameter** of an old vinyl record is 30 cm.
Calculate the area of the record.



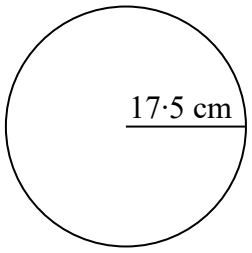
11. 

The top of a tin of bins has a **diameter** of 9·2 cm.
Calculate the area of the top of the tin.

12. A circular sign has a **diameter** of 36 cm.
Calculate the area of the sign.

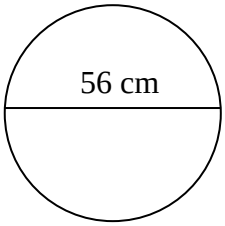


13. A metal symbol has a **radius** of 17·5 cm.

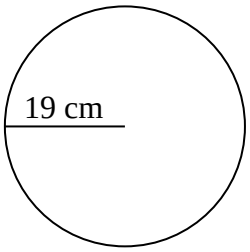


(a) Calculate the area of the symbol.
(b) Calculate the area of metal needed to make **two** symbols.

14. A no smoking sign has a **diameter** of 56 mm.
Calculate the area of the sign.

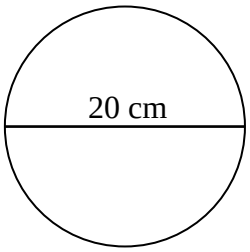


15. The glass see-through door on a washing machine has a **radius** of 19 cm.
Calculate the area of the glass door.

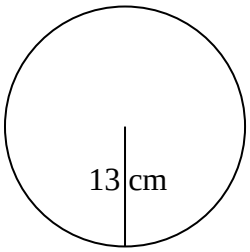


16. Calculate the area of each circle.

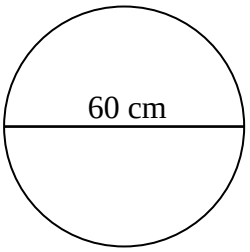
(a)



(b)



(c)



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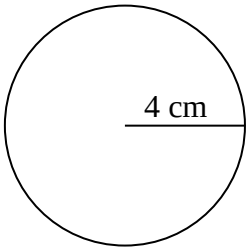

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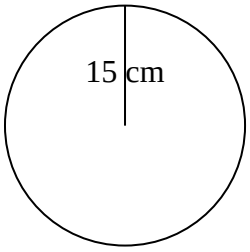

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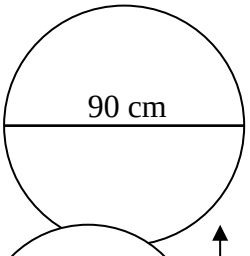
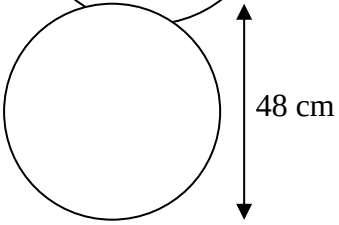
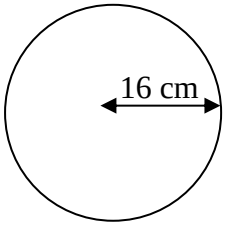


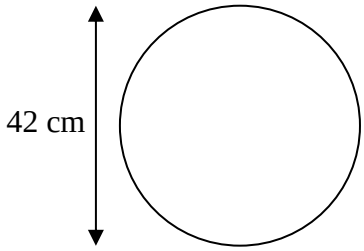
17. A dart board has a **diameter** of 48 cm.
Calculate the area of the board.



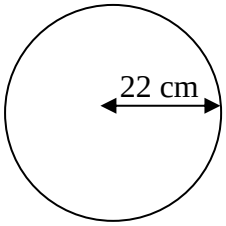
18. The **radius** of the top of a plate is 16 cm.
Calculate the area of the plate.



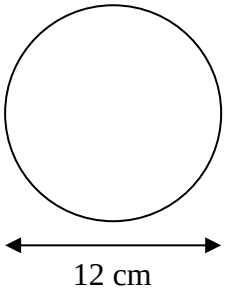
19. A wall clock has a **diameter** of 42 cm.
Calculate the area of the clock.



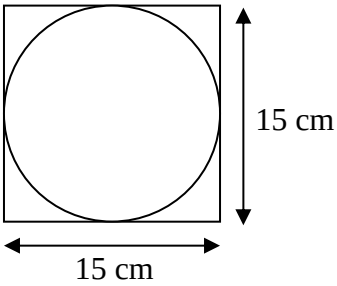
20. A circular window has a **radius** of 22 cm.
Calculate the circumference of the window.



21. Calculate the area of the CD shown opposite.



22. The diagram below shows a circle drawn inside a square.
The length of each side of the square is 15 cm.



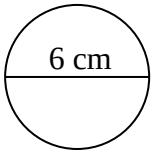
(a) Write down the **radius** of the circle.
(b) Calculate the area of the circle.

The Circumference of a Circle

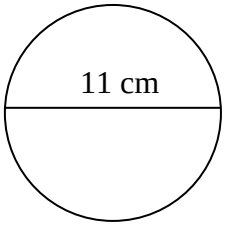
$$C = \pi d$$

Video 6 - Circumference

1. Calculate the circumference of a circle with **diameter** 6 cm.

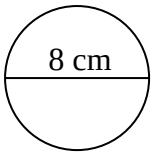


2.

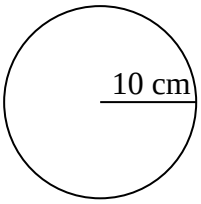


Calculate the circumference of a circle with **diameter** 11 cm.

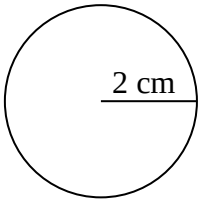
3. Calculate the circumference of this circle.



4. Calculate the circumference of a circle with **radius** 10 cm (careful).

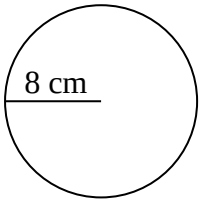


5.

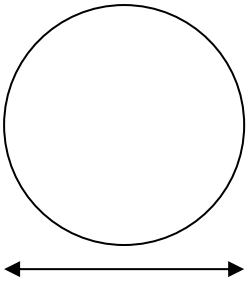


Calculate the circumference of a circle with **radius** 2 cm.

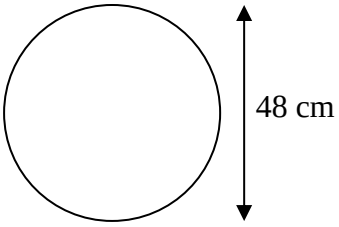
6. Calculate the circumference of this circle.

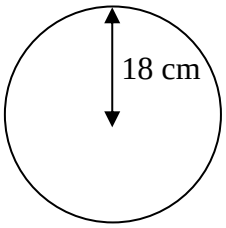


7. A large bicycle wheel has a **diameter** of 102 cm.
Calculate the circumference of the wheel.



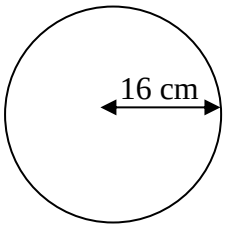
8. A dart board has a **diameter** of 48 cm.
Calculate the circumference of the board.

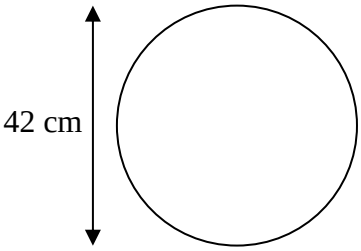


9. 

The **radius** of a circle is 18 cm.
Calculate the circumference of the circle.

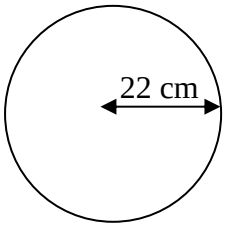
10. The **radius** of the top of a plate is 16 cm.
Calculate the circumference of the plate.

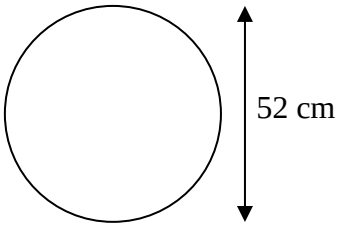


11. 

A wall clock has a **diameter** of 42 cm.
Calculate the circumference of the clock.

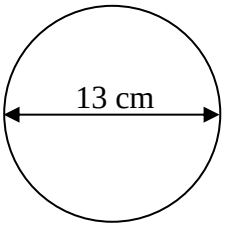
12. A circular window has a **radius** of 22 cm.
Calculate the circumference of the window.

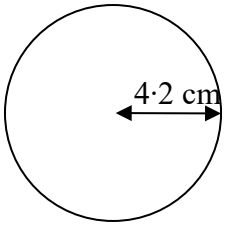


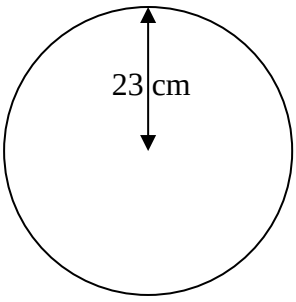
13. 

A circular road sign has a **diameter** of 52 cm.
Calculate the circumference of the sign.

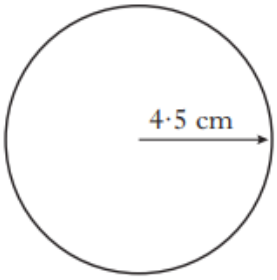
14. Calculate the circumference of each circle.

(a) 

(b) 

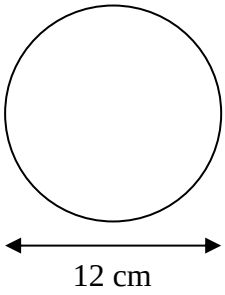
(c) 

15. A circle has a radius of 4·5 cm.



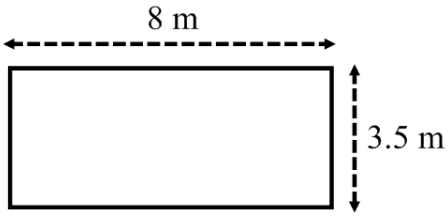
Calculate the **circumference** of the circle.

16. Calculate the circumference of the CD shown opposite.

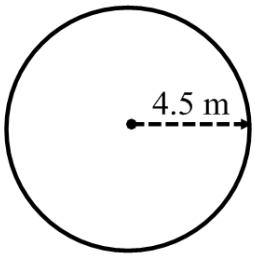


17. In the park, two new flower beds are being planted with roses.

- One flower bed is rectangular and measures 8 metres by 3·5 metres.

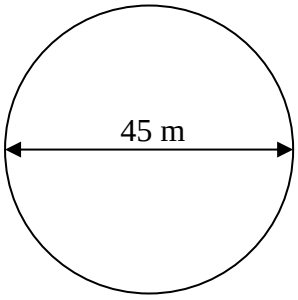


- The other flower bed is circular with a radius of 4·5 metres.



A fence is to be put round **each** flower bed.
Find the **total** length of fencing required.

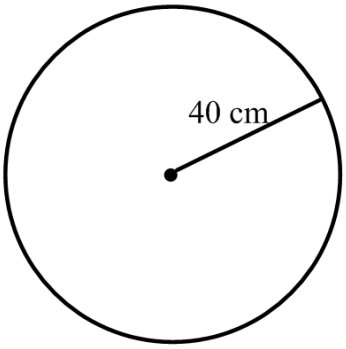
18. A circular race track is shown opposite.
The **diameter** of the track is 45 metres.



(a) Calculate the distance round one lap of the track (the circumference of the circle).

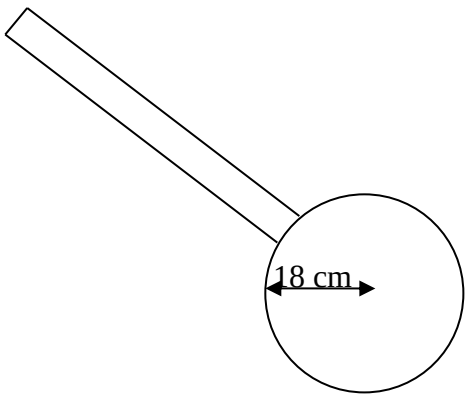
(b) A cyclist goes round the track 20 times during a race.
How far has he cycled altogether?

19. A battery operated toy train travels on a circular track.
The radius of the circle is 40 centimetres.



It takes one minute for the train to travel 8 times round the track.
How far does the train travel in one minute?

20. Alex uses a circular piece of wood to make a measuring wheel.
The wheel has a radius of 18 centimetres.
How many **complete metres** are measured by 15 rotations of the wheel?
[*Remember that 1 m = 100 cm.*]



MIXED QUESTIONS ON RATIO

Video 7 - Simplifying Ratios

Video 8 - Calculating Ratios

Video 9 - Sharing in a Ratio

1. In a cat and dog home, the ratio of cats to dogs is 25 : 40.
Write this ratio in its simplest form.

2. The ratio of men to women at a party is 3 : 2.
If there are 18 men at the party, how many women are there?

3. Alex and James share £160 in the ratio 5 : 3.
How much will each person receive?

4. The ratio of Derek's wages to Sharon's wages is 150 : 250.
Write this ratio in its simplest form.

5. On a train the ratio of men to women is 3 : 4.
If there are 60 men on the train, how many women are there?

6. Carol and Dennis share £80 in the ratio 3 : 1.
How much will each person receive.

7. The ratio of flour to sugar in a recipe is 250 : 100.
Write this ratio in its simplest form.

8. In a class the ratio of boys to girls is 2 : 3.
If there are 10 boys in the class, how many girls are there?

9. Bill and Ben share £84 in the ratio 5 : 2.
How much will each person receive?

10. The ratio of tennis players to golfers at a club is 100 : 350.
Write this ratio in its simplest form.

11. On a school trip the ratio of teachers to pupils is 3 : 10.
If there are 12 teachers on the trip, how many pupils are there?

12. Alison and Colin share a prize of £500 in the ratio 7 : 3.
How much will each person receive?

13. To make a shade of purple paint, blue paint and red paint are mixed in the ratio 600 : 1000.
Write this ratio in its simplest form.

14. On a farm the ratio of cows to sheep is 3 : 2.
If there are 12 cows on the farm, how many sheep are there?

15. Debbie and Dawn share £630 in the ratio 1 : 2.
How much does each person receive?

16. The ratio of CDs to DVDs on a shelf is 16 : 20.
Write this ratio in its simplest form.

17. In a baker's shop the ratio of loaves to rolls is 3 : 5.
If there are 600 loaves, how many rolls are there?

18. Peter and Helen share a prize of £450 in the ratio 5 : 4.
How much does each person receive?

19. To make a shade of green paint, blue paint and yellow paint are mixed in the ratio 900 : 1500. Write this ratio in its simplest form.

20. The ratio of three people's wages is 450 : 300 : 250.
Write this ratio in its simplest form.

21. The ratio of vowels to consonants in a book is 4 : 9.
If there are 12 000 vowels in the book, how many consonants are there?

22. Ed, Ted and Zed £200 in the ratio 2 : 3 : 5.
How much will each person receive?

23. Write the ratio 1000 : 40 in its simplest form.

24. In an aquarium the ratio of crabs to lobsters is 3 : 5.
If there are 20 **lobsters** in the aquarium, how many crabs are there?

25. A 3000 kilometre "crazy rally" is being held for charity.
Each participant will walk, cycle and drive distances that are in the ratio 1 : 2 : 3.

How far will each participant: (a) walk (b) cycle (c) drive?

26. At a Tennis and Golf Club, the ratio of tennis players to golfers is 90 : 150.

(a) Write the ratio of tennis players to golfers in its simplest form.

(b) The club has been given £16 000.
This money will be divided between the tennis section and the golf section in the same ratio as above.
How much money will be allocated to each section?

PROPORTION

Video 10 - Direct Proportion

1. 3 hats cost £120. How much will 5 hats cost?
2. 6 clocks cost £210. How much will 2 clocks cost?
3. 8 lamps cost £200. How much will 6 lamps cost?
4. 5 chairs cost £300. How much will 3 chairs cost?
5. 4 gold rings cost £120. How much will 6 gold rings cost?
6. 5 cans of cola cost £2·25. How much will 8 cans of cola cost?
7. 7 cups of coffee cost £5·25. How much will 3 cups of coffee cost?
8. 3 plates of chips cost £1·65. How much will 5 plates of chips cost?
9. 3 metres of carpet tape costs £1·62. How much will 5 metres of carpet tape cost?
10. 3 metres of copper tubing costs £6·21. How much will 5 metres of copper tubing cost?

11. 40 nails weigh 800 grams. How much will 15 nails weigh?

12. 60 nails weigh 900 grams. How much will 40 nails weigh?

13. 2 litres of paint covers 40 square metres of wall. How many square metres will 6 litres of this paint cover?

14. David types 90 words in 2 minutes. How many words will he type in 6 minutes?

15. It costs £20 for 4 people to get into the theatre. How much will it cost for 6 people to get into the theatre?

16. A lorry travels 120 kilometres in 2 hours. How far will the lorry travel in 4 hours?

17. A car travels 72 miles on 2 gallons of petrol. How far will the lorry travel on 5 gallons of petrol?

18. John's heart beats 168 times in 2 minutes, How many times will his heart beat in 5 minutes?

19. Andrew earns £18 for working 6 hours. How much will he earn for working 16 hours?

20. A dripping tap loses 48 litres of water in 4 days. How many litres of water will the tap lose in one week?

21. Ruth works in a soft-toy factory. She makes 60 elephants in 5 hours? How many elephants will she make in a 35-hour week?

22. A candle burns 10 centimetres in 5 hours. How many centimetres will the candle burn in 8 hours?

23. It costs £1400 for a 7-day cruise. How much will a 9-day cruise cost?

24. Mike takes 60 minutes to read 5 pages of a book. How long will it take him to read 3 pages?

25. John can type 168 words in 4 minutes. How many words can he type in 6 minutes?

26. Alan buys 7 pens for £3·57. How much will it cost him to buy 15 pens?

27. It cost £45 for 10 people to go to the pantomine. How much will it cost for 6 people to go to the pantomine?

28. A hotel charged £81 for a stay of 3 nights. How much would the hotel charge for a stay of 5 nights?

29. It cost a total of £24·50 for 7 people to see the film *Viking Raiders*. How much would it cost for a group of 9 people to see the film?

30. Charles was paid £44·80 for 16 hours of work. How much would he be paid for working 12 hours?

31. Tom can type 250 words in 5 minutes. How many words can he type in 13 minutes?

32. Alan can paint 45 square metres of wall in 3 hours. How many square metres can he paint in 2 hours?

33. A car covers a distance of 320 miles on 8 gallons of petrol. How many miles will the car cover on 5 gallons of petrol?

34. I was charged £15 for parking my car for 6 hours. How much would it cost to park my car for 4 hours?

35. 12 copies of a book cost £76·80. How much would 8 copies of the book cost?

36. It costs £12·80 to hire a bike for 4 hours. How much will it cost to hire the bike for 6 hours?

37. Jane types 960 words in 8 minutes. How many words will she type in 5 minutes?

38. A nurse measures a patient's heartbeat. The patient's heart beats 515 times over a 5 minute period. How many times will the patient's heart beat in 3 minutes?

39. David earned £36 for working 8 hours as a fruit picker. How much would he earn for working 20 hours?

40. 4 metres of timber cost £6·32. How much will 6 metres of timber cost?

41. Julie can type 375 words in 5 minutes. How many words can she type in 7 minutes?

42. A grandfather clock swings 180 times in 3 minutes. How many times will the clock swing in 5 minutes?

43. Postman Pat delivered 45 letters in 15 minutes. How many letters would Postman Pat deliver in 10 minutes?

44. 3 tyres cost £55·20. How much will 4 tyres cost?

45. It took a satellite 130 hours to travel around the earth 5 times. How long would it take the satellite to travel around the earth 8 times?

46. In an eating competition, Laura ate 20 pies in 4 minutes. At this rate, how many pies would Laura eat in 3 minutes?

MONEY

Show your working; you may use a calculator where necessary.

1. Mary is paid £165 per **week**.
Susan is paid £707 per **month**.

(a) Calculate Mary's **annual** pay.
(b) Calculate Susan's **annual** pay.
(b) Who earns more in a year and by how much?

2. John Smith earns a basic rate of £8 per hour.
One week he works 30 hours at the basic rate, 5 hours overtime at **time and a half** and 4 hours overtime at **double time**.
Calculate his **total** pay for this week.

3. A car showroom pays its sales staff 5% commission on all sales.
How much commission will a salesman earn when makes £24 000 worth of sales?

4. A salesman earns a basic monthly salary of £800 **plus** 7·5% commission on all sales.
His total sales amounted to £16 000 one month.

(a) Calculate the commission earned.
(b) Calculate his **total** salary for this month.

5. A washing machine can be bought on hire purchase by paying a £50 deposit followed by 12 monthly instalments of £25.
Calculate the total hire purchase price.

6. The cash price of a computer is £1500.
The computer can be bought on hire purchase by paying a 20% deposit followed by 6 monthly instalments of £225.

(a) Calculate the deposit.
(b) Find the total hire purchase price.

7. Gavin wants to insure his car.
The full annual premium is £600 but he will receive a 30% no claims discount on this premium.
Calculate the annual premium Gavin will pay.

8. A house is valued at £72 500.
The annual premium for insuring the house is £2·40 per £1000 of cover.

(a) Calculate the annual premium.
(b) If there is an additional charge of 10% for paying monthly, how much would the **monthly** premium be?

9. Laura invests £6000 in a bank account that pays 2·6% per annum interest.

(a) Calculate the interest due after one year.
(b) Calculate the interest due after 4 months.

(c) Calculate the interest due after 10 weeks.

10. Using an exchange rate of £1 = 1·25 euros:

(a) change £360 into euros (b) change 800 euros into pounds

11. Paul bought a bottle of aftershave in Spain for 32 euros.
When he was back in Britain, he noticed that the same bottle of aftershave cost £28·95. The exchange rate was £1 = 1·16 euros.

How much did he save by buying the aftershave in Spain?
Give your answer in **pounds and pence** correct to the nearest penny?

12. The Jones family changed £1200 into US dollars at the rate of 1·55 dollars to the pound before going on holiday to Florida.
They spent 1380 dollars on holiday and changed what was left back into pounds at the rate of 1·50 dollars to the pound.
How much did they receive?

13. A record shop bought 50 copies of a new music CD for a total of £375.
The shop then sold all 50 copies of the CD for £9·95 each.
How much **profit** did the shop make altogether after selling all 50 CDs?

14. Two garages are selling the same model of car for the same price.
One garage asks for a £500 deposit followed by 12 equal payments of £750.
The other garage asks for a £1100 deposit followed by 24 equal payments.
How much should each payment be?

PROBABILITY

Video 11 - Probability

1. A fair die is rolled.
What is the probability of rolling:

(a) an even number (b) a number less than 3?

2. A number is picked at random from the numbers 0, 1, 2, 3, 4, 5, 6, 7, 8, 9.
What is the probability that the number picked is:

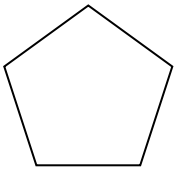
(a) less than 6 (b) greater than 7?

3. In a game of Scrabble, the word below is worth 11 points.

W_3	I_1	N_2	N_2	E_1	R_2

The above tiles are put in a bag and one tile is picked out without looking.
What is the probability that the tile picked out is:

(a) an N (b) worth 2 points (c) a vowel?

4. 

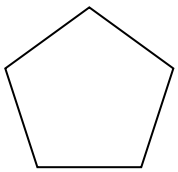
DON'T DO What is the probability that this spinner will stop on:

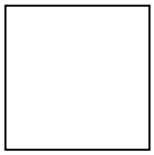
(a) 3 (b) an even number
(c) an odd number?

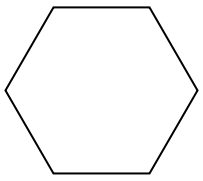
5. A basket contains 16 eggs. 4 are brown and the rest are white. 5 eggs are cracked and one is bad.
Find the probability that an egg picked at random will be:

(a) brown (b) white (c) bad (d) **not** cracked?

6. Three different spinners are shown below. **DON'T DO**

(i) 

(ii) 

(iii) 

(a) Find the probability of scoring a 2 on each spinner.
(b) Find the probability of scoring a 1 on each spinner.
(c) Find the probability of scoring a 4 on each spinner.

7. (a) In a word game, a letter is chosen at random from the word PERCENTAGE.
What is the probability that the letter chosen is an E?

(b) Later in the game, a letter is chosen at random from the word PARALLEL.
What is the probability that the letter chosen will be an A?

8. The table shows the number of each type of tree in a park.

Type	Number
Oak	8
Elm	12
Chestnut	16
Beech	24

(a) How many trees are there altogether?

(b) Someone reports that one tree has been damaged.
Estimate the probability that the damaged tree is:
(i) an oak (ii) a beech tree.

9. A card shop kept a record of the different types of Christmas cards sold.

Type	Number of cards
Religious	50
Snow scene	36
Santa	46
Candles/Holly	57
Toys	23
Other	64

(a) How many cards were sold altogether?

(b) Estimate the probability that the next card sold will have:
(i) a religious theme (b) a Santa theme
(iii) a toy theme.

(c) Estimate the probability that the next card sold will **not** have a snow scene.

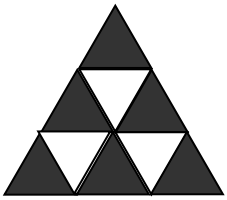
10. The results of a survey on favourite ball sports are shown below.

Favourite sport	Number of votes
Tennis	12
Rugby	16
Cricket	8
Football	24
Golf	16
Other	4

John Smith was one of the people who took part in the survey.

(a) Estimate the probability that John named rugby as his favourite sport.
(b) Estimate the probability that John named a sport other than football as his favourite sport.

11. A pin is stuck at random into the network of congruent triangles opposite.



Find the probability that the pin lands in:
(a) a white triangle (b) a shaded triangle.

12. In a row of houses, 25 have double-glazing and 15 do not.
A salesman knocks at the door of one of the houses at random.

What is the probability that the house will:
(a) have double-glazing (b) not have double glazing?

13. There are 1 blue, 2 red and 3 yellow counters in a bag.

(a) A counter is taken from the bag at random.
What is the probability that the counter is red?

(b) The counter is replaced in the bag and two green counters are added to the bag. Another counter is then taken from the bag.
What is the probability that this counter is **not** yellow?

14. (a) A box of sweets contains 5 chocolates, 10 mints and 15 chews.
A sweet is selected from the box at random.
Find the probability that the sweet is a:
(i) chocolate (ii) mint (iii) chew.

(c) Another box contains 60 mixed sweets.
The probability of picking a chocolate from this box is $\frac{2}{5}$.
How many chocolates are there in this box?

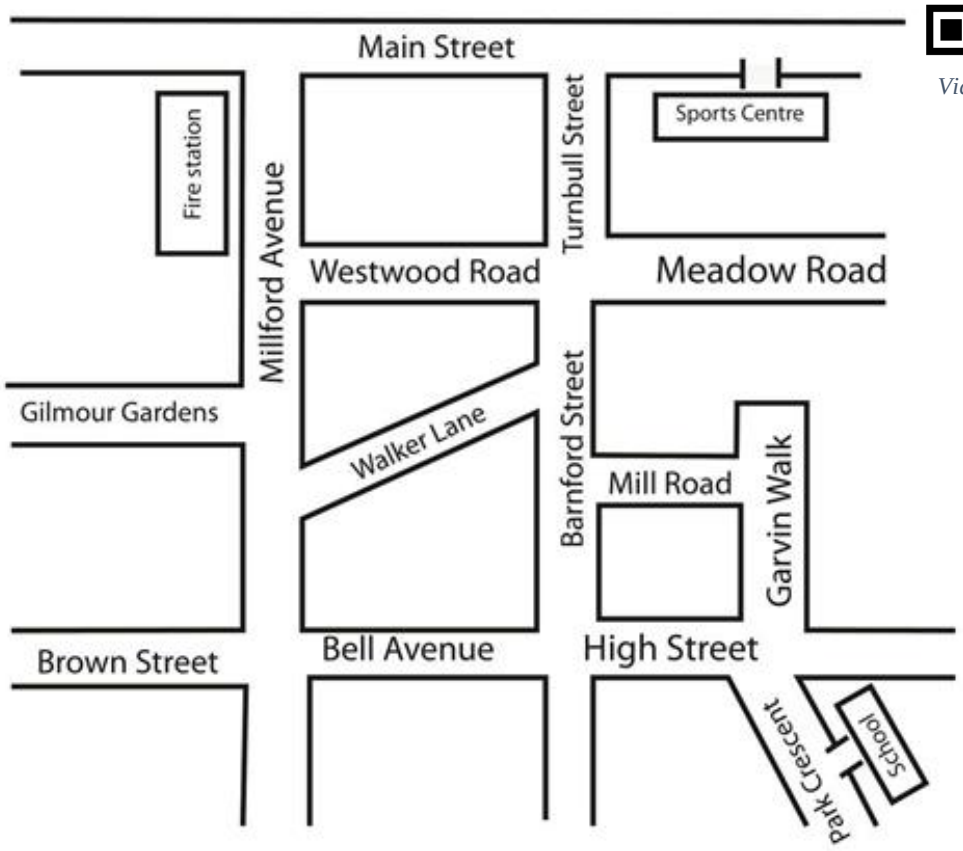
Scale Drawing

You have been given the following directions by Sam to help you find his house in Bell Avenue.

- Come out of the Sports Centre on to Main Street and turn left.
- Go along Main Street then turn left into Turnbull Street.
- Go down Turnbull Street and Barnford Street and turn right into Bell Avenue.
- Sam's house is halfway along Bell Avenue.

Video 12 - Scale Drawings

(a) On the map below, show Sam's route and mark his house with X.



(b) The scale of the map is 1 cm = 100 m.
Estimate the distance you have to walk altogether to get from the Sports Centre to Sam's house.

(c) Give directions to get from the Fire Station to the School.

Proportion Answers:

1.	£200	2.	£70	3.	£150	4.	£180	5.	£180	6.	£3.60
7.	£2.25	8.	£2.75	9.	£2.70	10.	£10.35	11.	300g	12.	600g
13.	120sqm		14.	270 words		15.	£30	16.	240km	17.	180miles
18.	420times		19.	£48	20.	48 litres		21.	420 elephants		
22.	16cm	23.	£1800	24.	36mins		25.	252words		26.	£7.65
27.	£27	28.	£135	29.	£31.50		30.	£33.60		31.	650words
32.	30sqm	33.	200miles		34.	£10	35.	£51.20		36.	£19.20
37.	600words		38.	309beats		39.	£90	40.	£9.48	41.	525words
42.	300times		43.	30letters		44.	£73.60		45.	208hours	
46.	15pies										

Circumference of a circle Answers

1.	18·8 cm	**2.**	34·6 cm	**3.**	25·1 cm	**4.**	62·8 cm
5.	12·6 cm	**6.**	50·3 cm	**7.**	320·4 cm	**8.**	150·8 cm
9.	113·1 cm	**10.**	100·5 cm	**11.**	131·9 cm	**12.**	138·2 cm
13.	163·4 cm						
14.(a)	40·8 cm	(b)	26·4 cm	(c)	144·5 cm		
15.	28·3 cm	**16.**	37·7 cm				
17.	Perimeter of rectangular flower bed = 23 m						
	Circumference of circular flower bed = 28·3 m						
	Total length of fencing required = 51·3 m						
18.(a)	141·4 m	(b)	2828 m	**19.**	2010·4 cm	**20.**	16 complete metres

Area of a circle answers

1.	1256·6 cm^2	**2.**	50·3 cm^2	**3.**	254·5 cm^2	**4.**	153·9 cm^2
5.(a)	28·3 cm^2	(b)	530·9 cm^2	(c)	1963·5 cm^2	(d)	63·6 cm^2
(e)	314·2 cm^2	(f)	113·1 cm^2				
6.	78·5 cm^2	**7.**	201·1 cm^2	**8.**	452·4 cm^2		
9.(a)	12·6 cm^2	(b)	153·9 cm^2	(c)	1963·5 cm^2	(d)	2827·4 cm^2
(e)	380·1 cm^2	(f)	63·6 cm^2				
10.	706·9 cm^2	**11.**	66·5 cm^2	**12.**	1017·9 cm^2		
13.(a)	962·1 cm^2	(b)	1924·2 cm^2	**14.**	2463·0 cm^2	**15.**	1134·1 cm^2
16.(a)	314·2 cm^2	(b)	530·9 cm^2	(c)	2827·4 cm^2	(d)	50·3 cm^2
(e)	706·9 cm^2	(f)	6361·7 cm^2				
17.	1809·6 cm^2	**18.**	804·2 cm^2	**19.**	1385·4 cm^2	**20.**	1520·5 cm^2
21.	113·1 cm^2	**22.**(a)	7·5 cm^2	(b)	176·7 cm^2		

Pythagoras Answers

1a. 15	b) 12	c) 50	d) 5	e) 10	f) 5
g) 40	h) 36	i) 75			

2. 13	3. 96	4. 90	5. 137	6. 16	7. 30
8. 20					

Probability

1a. ½ b. 2/6 = 1/3 2a. 6/10 = 3/5 b. 2/10 = 1/5

3a. 2/6=1/3 b. 3/6 = ½ c. 2/6 = 1/3

4a. Miss out

5a. 4/16 = ¼ b. 12/16 = ¾ c. 1/16 d. 11/16

6. Miss out

7a. 3/10 b. 2 /8 = ¼

8a. 60 b. i. 8/60 = 2/15 ii. 24/60 = 2/5

9a. 276 bi. 50/276=25/138 ii. 46/276=1/6 iii. 23/276 = 1/12

10a. 16/80 = 1/5 b. 56/80 = 7/10

11a. 3/9 = 1/3 b. 6/9 = 2/3

12a. 25/40 = 5/8 b. 15/40 = 3/8

13a. 2/6 = 1/3 b. 3/8

14ai. 5/30 = 1/6 ii. 10/30 = 1/3 iii. 15/30 = ½

b. 60÷5 = 12 x 2 = 24

Mixed Questions on Ratio – Answers

1. 5:8 2. 12 3. Alex £100, James £60 4. 3:5 5. 80

6. Carol £60, Dennis £20

7. 5:2 8. 15 9. Bill £60, Ben £24 10. 2:7 11. 40

12. Alison £350, Colin £150

13. 3:5 14. 8 15. Debbie £210, Dawn £220 16. 4:5 17. 375

18. Peter £250, Helen £200

19. 3:5 20. 9:6:5 21. 27000 22. Ed £40, Ted £60, Zed £100

23. 25:1 24. 12 25. Walk 500 km, Cycle 1000 km, Drive 1500km

26a) 3:5 b) Tennis £6000, Golf £10000

Volume answers

1. 960000cm^3 = 960litres 2. 12cm 3. 600cm^3 4. 15707.96cm^3

b. 300m^3 c. 589.59m^3

5. 942.48m^3

Money Answers

1a. £8580 b. £8484 c. £96 – Mary earns more 2. £364 3. £1200

4. a. £1200 commission b. £2000 5. £350 6a. £300 b. £1650

7. £180

8a. £174 b. 10% extra = £1.74 total now over the year is £175.74 ÷ 12 = £14.65 per month

9a, £156 year b. £52 c. £30

10a. 450euros b. £640

11. cost of aftershave in euros in Britain would be 33.58 euros. SO buying in Spain is cheaper by 1.58 euros

12. £320 13. £122.50 profit 14. £350