

# S2 Block Test Three Revision Booklet MP2



# Contents

Pythagoras

Converse of Pythagoras

Enlargement/Reduction

Financial Maths

Scales and Bearings

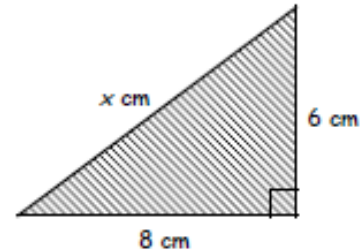
# Pythagoras

## Exercise 11.4

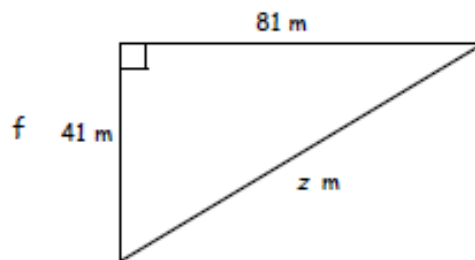
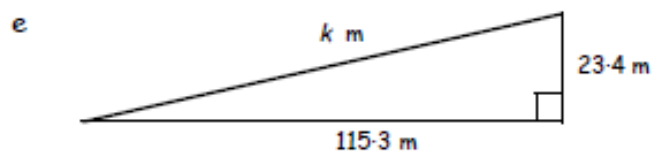
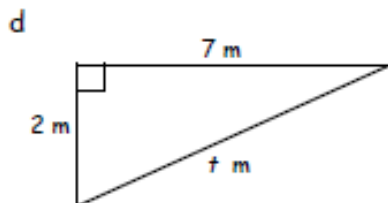
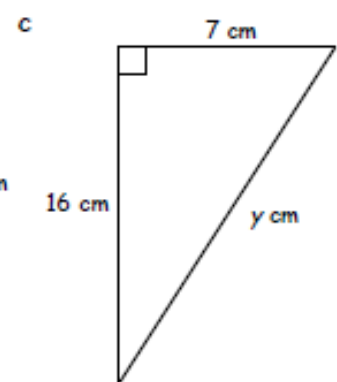
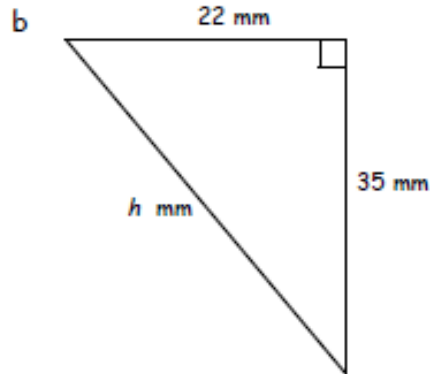
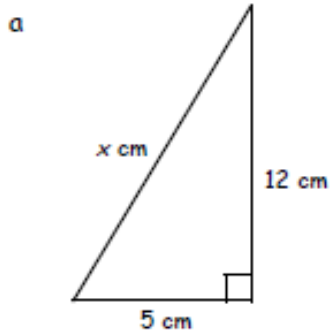


1. Copy and complete to calculate the length of the hypotenuse :-

$$\begin{aligned}c^2 &= a^2 + b^2 \\x^2 &= 8^2 + 6^2 \\x^2 &= 100 \\x &= \sqrt{100} = \dots\end{aligned}$$



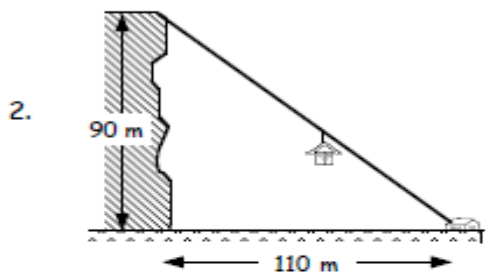
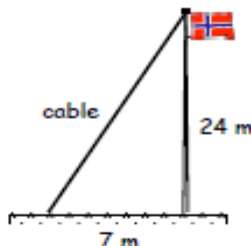
2. Use Pythagoras' Rule to calculate the length of the hypotenuse in each of these triangles. (Round to two decimal places where necessary).



# Pythagoras

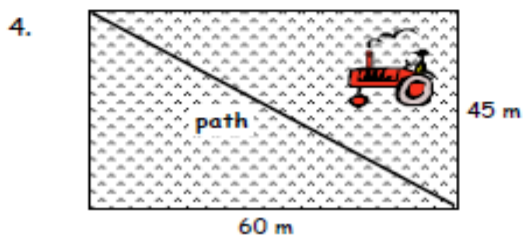
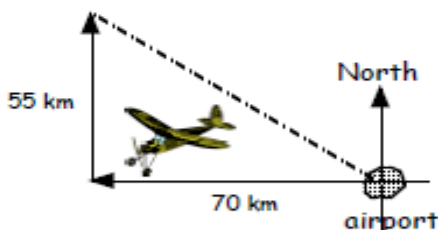
## Exercise 11.5

1. A flagpole is supported by a cable as shown in the diagram.  
Calculate the length of the cable.



- A cable car is used to get to the top of a cliff.  
Calculate the length of cable, to the nearest metre.

3. A small plane left the airport and flew 70 km due West.  
The plane then turned due North and flew for 55 km.  
If the plane then flew straight back to the airport, how far did it fly?



- A farmer has a rectangular field 60 m by 45 m.  
If the farmer wanted to make a diagonal path across the field, how long would the path be?

5. An army tank travels from HQ due South for 8 km.  
The tank then turns due East and travels for 5 km.  
The tank then drives directly back to HQ.
- Calculate the **total distance** the tank travelled.  
(Drawing a diagram might help).
  - Write down your answer to the nearest metre.



# Pythagoras

## Exercise 11.6



1. Copy and complete to find the missing length:-

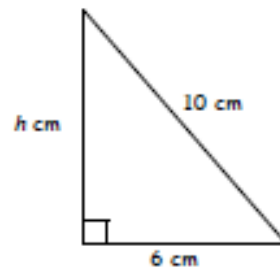
$$a^2 = c^2 - b^2$$

$$h^2 = 10^2 - 6^2$$

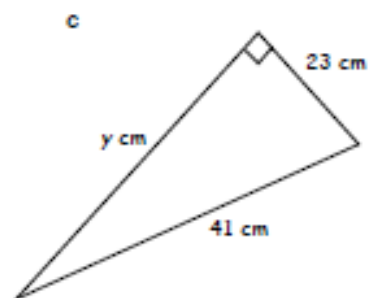
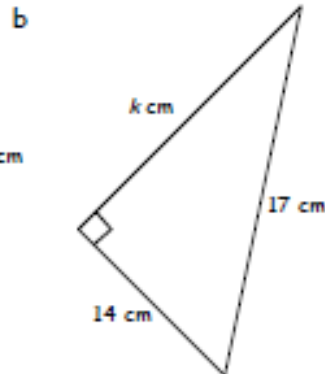
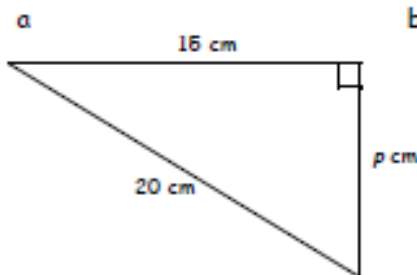
$$h^2 = \dots - \dots$$

$$h^2 = \dots$$

$$h = \sqrt{\dots} = \dots$$



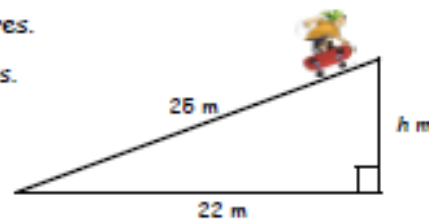
2. Calculate the length of each missing side in the triangles below :-



3. A skateboard ramp has a length of 25 metres.

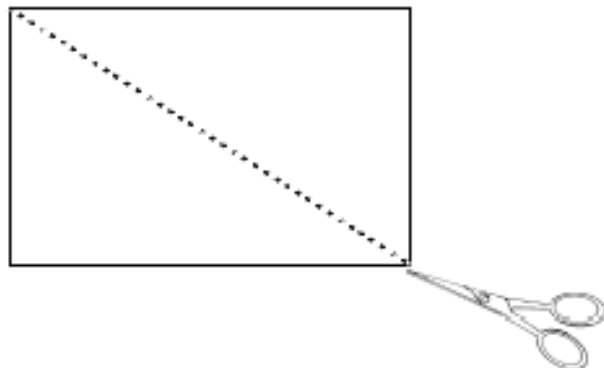
The horizontal distance shown is 22 metres.

- a Calculate the height of the ramp to 2 decimal places.  
b Write your answer to the nearest centimetre.



4. A large rectangular piece of card is to be cut into two pieces by cutting along the diagonal.

The length of the card is 80 centimetres and the diagonal length is 92 centimetres.



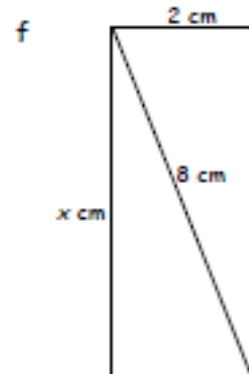
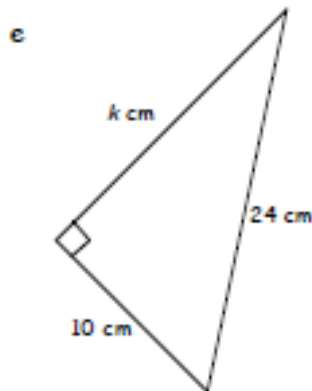
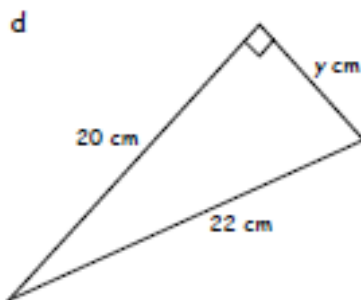
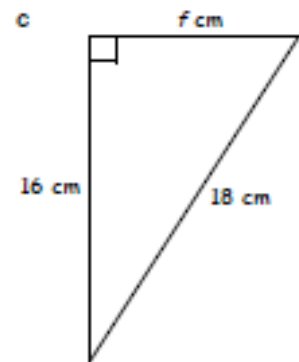
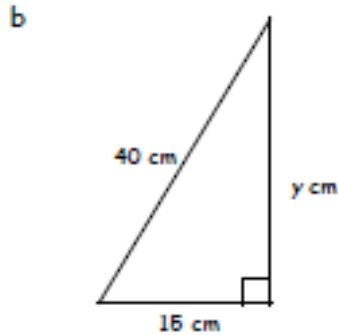
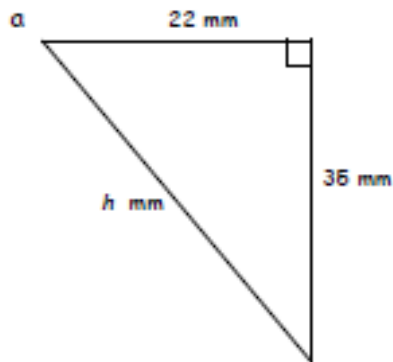
Calculate to the nearest millimetre the width of the card.

# Pythagoras

## Exercise 11.7



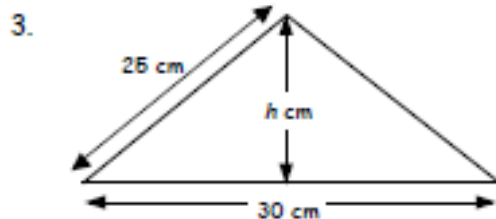
1. Find the value of the letter in each of the following :-



2. A jeep drives due North for 30 kilometres then turns due West.

The jeep drives for a while then turns and drives the 50 kilometres directly back to where it started.

How far in total did the jeep drive ?



Calculate the height of the roof with dimensions as shown in the diagram.

# Answers



- a 4                      b 7
- a 5                      b 10                      c 9  
d 8                      e 1                      f 13
- a 4-47                      b 10-49                      c 17-32  
d 3-61                      e 8-94                      f 35-13
- 8 cm
- a 81 cm<sup>2</sup>                      b 16 cm<sup>2</sup>                      c 65 cm<sup>2</sup>

## Exercise 11.3

- a 9, 16, 25                      b 25

## Exercise 11.4

- 10 cm
- a 13 cm                      b 41-34 cm                      c 17-46 cm  
d 7-28 m                      e 117-65 m                      f 90-79 m

## Exercise 11.5

- 25 m
- 142 m
- 89-02 km
- 75 m
- a 22-43 km                      b 22434 m

## Exercise 11.6

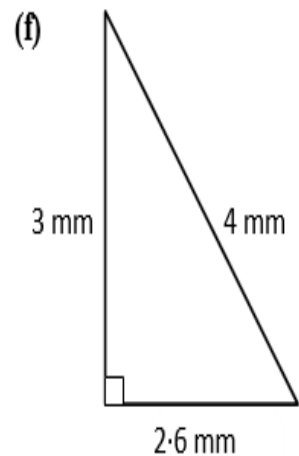
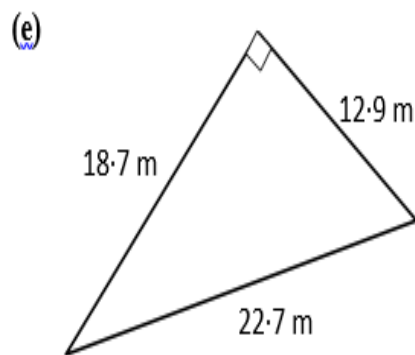
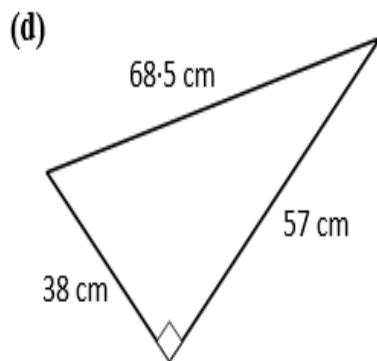
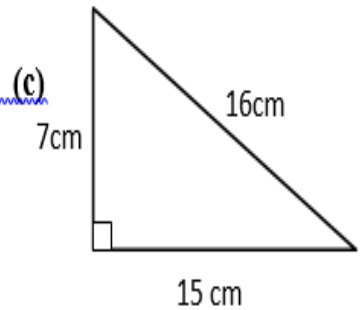
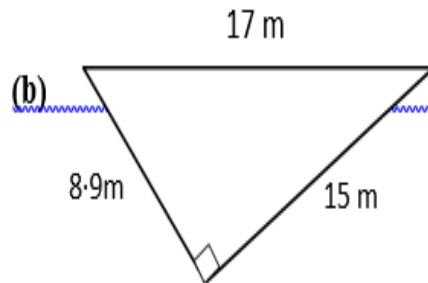
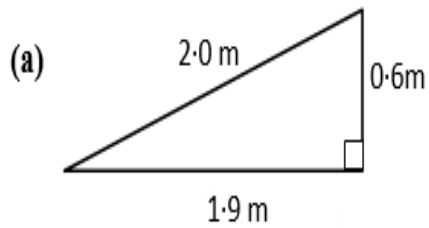
- 8 cm
- a 13-23 m                      b 9-64 cm                      c 33-94 cm
- a 11-87 m                      b 1187 cm
- 45 mm

## Exercise 11.7

- a 41-34 mm                      b 37-08 cm                      c 8-25 cm  
d 9-17 cm                      e 23-26 cm                      f 7-75 cm
- 40 km
- 20 cm
- 8-66 cm

# Converse of Pythagoras

21. Use the converse of Pythagoras Theorem to decide if these triangles are right angled or not.



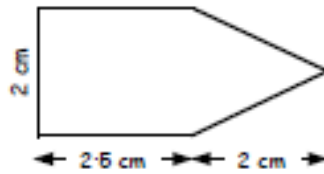


# Answers

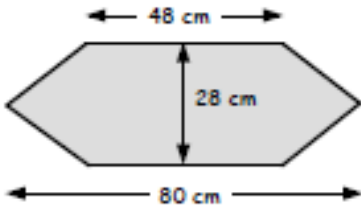
21. (a) no                      (b) no                      (c) no  
(d) yes                      (e) no                      (f) yes

# Enlargement/Reduction

7. Draw a neat 2 times enlargement of this shape.



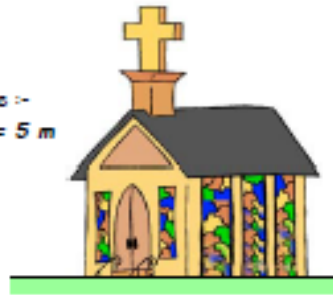
8.



Make an accurate drawing of this shape but with its dimensions one quarter of those shown.

9. A church is to be drawn using a scale of 1 cm represents 5 metres.

scale :-  
1 cm = 5 m



If the height in the scale drawing is 4.5 cm, find the height of the real church.

10.



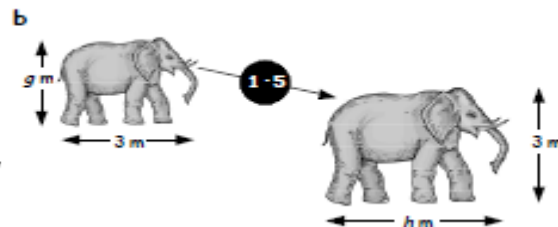
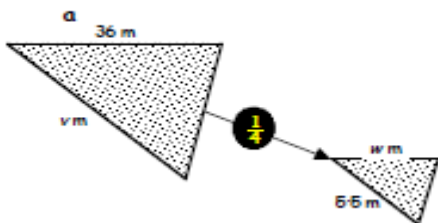
A model of a house is to be built  $\frac{1}{40}$  of its real size. The actual house is 12 metres tall.

What will the height of the model be, in centimetres?

11. What is the enlargement **scale factor** in this diagram?



12. The scale factors of each diagram below are shown. Find the values of  $v$ ,  $w$ ,  $g$  and  $h$ .



# Answers

7. Check diagram

8. Check diagram

9. 22.5 m

10. 30 cm

11. 25

12. a  $w = 9$ ,  $v = 22$

b  $h = 45$ ,  $g = 2$


# Financial Maths

## Exercise 8.1



1. Charlene is a clerkess with a basic rate of pay of  $\text{€}12.55$  per hour. How much does she get paid when she works a basic 36 hour week?
2. Gerry's payslip last week showed that he had worked for 42 hours. If he earned  $\text{€}579.60$ , what was his hourly rate?



3.  Rachel's monthly pay at the Oyster Bar is  $\text{€}975$ . Calculate her annual salary.

4. Donnie works as an apprentice blacksmith for 30 hours per week. His annual pay is  $\text{€}17\,784$ .
  - a How much does Donnie earn each week?
  - b Calculate his hourly rate.



## Exercise 8.2




1. Trevor works for an electrical company earning  $\text{€}17\,600$  per year. Last year, with the company doing well, Trevor received bonuses of  $\text{€}206$  in April,  $\text{€}387$  in August and  $\text{€}529$  in November.
  - a Work out Trevor's total bonus money.
  - b What was his total pay for last year?

2. Mabel sells peanuts round her local neighbourhood to make some extra cash. She gets paid  $\text{€}25$  per week plus 7 pence for each packet of nuts she sells. One week she sold 120 packets. How much did she earn in total that week?



3. Sid, a lawyer earning  $\text{€}38\,000$  per year, received an annual salary increase of 2.5%. Calculate his new salary.

4.  Paul is a butler for Sir Hugh Laird and earns  $\text{€}19\,500$  per year. When Paul asked for an 5% pay rise he was offered a rise of  $\text{€}1000$ . Find out how much Paul had asked for and decide whether or not he should accept Sir Hugh's offer.


# Financial Maths

## Exercise 8.3






1. A door to door salesman makes 4% commission on all sales.  
Calculate how much he can make when he sells €850 worth of goods.
2. When Dana sold furniture worth €25000, she made commission at the rate of 12.5%.  
How much did she make ?
3. Jacob is a car salesman, earning €1540 per month PLUS 3% commission on all second hand car sales.  
Last month he sold €140000 worth of second hand cars.  
a Calculate his commission.                      b Work out his total pay for the month.



4.  Miss Thomas sells cosmetics. She gets a basic €325 per week, plus 2% commission on all sales over €500.  
Calculate her total wage for a week if she sells €750 worth of cosmetics.

## Exercise 8.4



1. Peter is a fence painter and normally gets paid €10.50 per hour, but when he works overtime he gets paid double time.  
Work out what Peter earns for 5 hours overtime. 
2.  Billy works on the railways for a basic rate of €12 per hour. Any overtime is paid at time and a half.  
Work out what he would be paid if he were to work 8 hours overtime.
3. Charles the golf pro works overtime on a Tuesday night from 5 pm until 8 pm and on a Wednesday from 6.30 pm until 10.30 pm. His basic rate of pay is €18 per hour, but his overtime rate is double time.  
a How many hours overtime does Charles work ?  
b What does he get paid in total for the two nights ? 
4. Jenny repairs watches for a living. She works a 40 hour week for a basic rate of €9.20 per hour. She also works 4 hours on a Saturday at time and a half and 5 hours on a Sunday at double time.  
Calculate Jenny's :-  
a basic earnings,                      b earnings for a Saturday,  
c earnings for a Sunday,            d total pay for the week.

# Financial Maths

## Exercise 8.5



1. Miranda decided to pay for her new diamond ring by using hire purchase. The cash price of the ring was €480. She put down a deposit of €50 and paid 12 monthly instalments of €38.
- Work out how much the instalments cost altogether.
  - Calculate the total HP price of the ring.
  - How much cheaper would it have been by paying cash?



2. Alan's new freezer was to cost him €925. As he could not afford to pay cash, he took out a hire purchase agreement made up of a deposit of €100 and equal payments of €35 every month over 3 years.
- How many payments did he make?
  - How much was the total HP payment including the deposit?
  - How much did he lose out on by not paying cash?



3. Mr Fraser decided to get central heating installed in his house. He was quoted a cash price of €3400 or he could pay a deposit of 10% of the cash price plus 24 instalments of €130.
- How much was the deposit?
  - How much extra would he have to pay by paying up the central heating?



4. The Baird's bought a new table and chairs from IEKA. The deal was that they had to pay a deposit of 15% of the €1400 cash price and pay up the balance over 8 months at no extra charge.
- After paying the deposit, how much did they still owe IEKA?
  - How much did they have to pay each month for the 8 months?



5. A yacht was on offer at the marina for the cash price of €26000 but if taken on HP there was an additional charge of €1000.

After making a deposit of  $33\frac{1}{3}\%$  of the total price, I agreed to pay the remainder in equal instalments over 20 months.

Calculate :-

- the total HP price for the yacht.
- how much I paid as a deposit.
- the amount I was due to pay each month.



# Financial Maths

## Exercise 8.6



Potter & Broadfoot  
Insurance Company

Annual Premium Rates

Building - €2.75 per €1000

Content - €5.80 per €1000

Kean, Burke & Sutton  
Insurance Company

Yearly Premiums

Building - €3.10 per €1000

Content - €4.80 per €1000

Use the adverts for these Insurance Companies to answer the following :-

1. A detached house is worth €150000.

How much would it cost each year to insure it with :-

- a Potter & Broadfoot ?                      b Kean, Burke & Sutton ?



2. Mark sold his flat, valued at €80000 and moved to a 5 apartment villa in Elgin for which he paid €175000.

His flat had been insured with Potter & Broadfoot, but he insured his new villa with Kean, Burke & Sutton.

- a What was the yearly insurance on his old flat ?  
b What is the yearly insurance on his new villa ?  
c How much extra did he have to pay each year on insurance when he moved house ?

- 3.



Dougal and Doris' lighthouse home is valued at €210000. The entire contents of their house are valued at €60000. They insure everything with Potter & Broadfoot.

- a How much will their annual building insurance be ?  
b How much will their annual contents insurance be ?  
c How much will their total insurance be ?  
d If they pay their insurance monthly, what will their payments be each month ?

4. My holiday home in Spain is valued at €450000. My furniture and contents are estimated to be worth €80000.

- a If I insure the building and the contents with Potter & Broadfoot, what will it cost me in insurance for the year ?  
b If I choose to insure both building and the contents with Kean, Burke & Sutton, what will the total cost be ?  
c Which of the two is dearer and by how much ?



# Financial Maths

## Exercise 8.7



**HAZEL & DUNCAN**  
Endowment (with profits)  
Monthly Premiums for every £1000 Insured

Age		10 years		20 years	
male	female	Non-smoker	Smoker	Non-smoker	Smoker
16-24	16-31	£482	£514	£229	£306
25	32	£483	£516	£230	£307
26	33	£484	£516	£230	£308
27	34	£485	£516	£231	£308
28	35	£487	£517	£233	£309

Use the table above to help calculate the monthly premium due for endowment policies taken out by :-

- Mary, a non-smoker, is aged 34. Takes out 10 year policy for £60000.
- Richard, a smoker, is aged 18. Takes out 20 year policy for £50000.
- Stephen, a smoker, is aged 27. Takes out 10 year policy for £120000.
- Kirsty, a non-smoker, is aged 29. Takes out 20 year policy for £55000.
- Rhona, a smoker, is aged 21. Takes out 20 year policy for £225000.



## Exercise 8.8



- For each of these basic car insurance premiums, work out the actual annual premium which has to be paid :-
  - Basic premium £200, no claim for 1 year.
  - Basic premium £800, no claim for 2 years.
  - Basic premium £450, no claim for 3 years.
  - Basic premium £1600, no claim for 4 years.
  - Basic premium £480, no claim for 20 years.
  - Basic premium £3000, made a claim last year !

### CAR INSURANCE

Period without claim	Discount
1 year	30%
2 years	40%
3 years	50%
4 or more years	60%



- Lawrence has not put in a claim for 7 years.



- What % discount should Lawrence get when he goes to pay his car insurance ?
- If his premium is £475 before discount, how much will he actually have to pay ?
- He is allowed to pay his insurance over 10 months without any extra charges. How much does Lawrence pay each month ?




# Financial Maths

## Exercise 8.9



Children under 12 years pay 50% less and under 3's go free.

 Duration of Holiday	Holiday Travel Insurance Premiums		
	GB, N Ireland, Isle of Man, Channel Islands	EU Countries Algeria, Morocco, Egypt, Israel, Madeira, Canary Islands	Rest Of World eg USA, Caribbean, Far East, Australia
Up to 7 nights	£10	£24.60	£75
8 to 14 nights	£14.60	£30	£85
15 to 28 nights	£16.40	£38.60	£100
over 28 nights	£19.25	£45	£110

- What will be the total cost of travel insurance for the following holidays :-
  - Mr Bennett - 5 nights - Israel
  - Miss Sands - 15 nights - Channel Islands
  - Mr/Mrs Donaldson - 11 nights - USA
  - Mrs Tate/son Bud (8)/daughter Jill (1) 30 nights France.
- Mr & Mrs Poulter take their 3 children, Sally aged 11, Robert aged 5 and Helen aged 18 months on a 20 night stay to Morocco.  
How much will their travel insurance cost them?

## Exercise 8.10



- Change each of the following into euros when  $£1 = 1.45€$  :-
  - £40
  - £380
  - £9550.
- Change each of the following into £'s when  $£1 = 1.44€$  :-
  - 72€
  - 475.2€
  - 1728€.
- Mr Samson changed £2100 into euros for his holiday at the rate of  $£1 = 1.45€$ .  
On holiday he spent 3000€ and exchanged the remaining amount into pounds on his return.  
He received the same exchange rate.  
How many £'s did he have on his return? (Answer to the nearest whole £).
- Mr Tung arrived in Scotland from Japan with 163120 Japanese Yen.  
He exchanged it for pounds at the rate of 203.9 Yen to the £ and bought a kilt for £475 and a sporran for £28.  
How many pounds was he left with?




# Financial Maths

## Revision Exercise



1. Donnie is a gardener and works for 24 hours per week. His annual pay is £6864.
- How much does Donnie earn each week?
  - Calculate his hourly rate.




2.  Tony, an engineer earning £48 000 per year, received an annual salary increase of 3.5%. Calculate Tony's new salary.

3. Helen is an electrician and has won a contract to rewire a block of flats. If she works hard she gets a bonus of £3.50 for every socket she fits over the total of 100.
- How much bonus money does she earn for :-



- 99 sockets
- 150 sockets ?

4.  Samantha is a model, earning a basic £22 000 per annum PLUS 2.5% commission on all sales bearing her name. Last year those sales reached £120 000.
- Calculate her commission.
  - Work out her total pay for the year.

5. Agnes is a florist. She works a 42 hour week for a basic rate of £8.50 per hour. She also works 6 hours on a Saturday at time and a half and 4 hours on a Sunday at double time.

Calculate Agnes' :-

- basic earnings
- earnings for a Saturday
- earnings for a Sunday
- total pay for the week.



6. Mrs Cormack decided buy a four-poster bed, cash price £2680. By Hire Purchase, she could pay a deposit of 20% of the cash price plus 36 instalments of £60.
- How much was the deposit ?
  - Calculate the total HP price.
  - Mrs Cormack paid cash !  
How much did she save by doing this ?



# Financial Maths

7. The Old Farmhouse is valued at £520000.  
The entire contents of the house are valued at £90000.  
The house and its contents are insured with Kean, Burke & Sutton.

Kean, Burke & Sutton Insurance Company	
Yearly Premiums	
Building	£3.10 per £1000
Content	£4.80 per £1000

- How much will the annual building insurance be ?
  - How much will the annual contents insurance be ?
  - How much will the total insurance be ?
  - If the insurance is paid monthly, what will the payments be each month ?
8. \* Look back to the table for Hazel & Duncan Insurance on page 23.

Use the table on that page to help calculate the monthly premium due for endowment policies taken out by :-

- Lynda, a non-smoker, is aged 33. Takes out 10 year policy for £12000.
- Bert, a smoker, is aged 28. Takes out 20 year policy for £24500.

9. Claire has not put in a car insurance claim for 2 years.

- What % discount should Claire get when she goes to pay her insurance ?
- If her premium is £680 before discount, how much will she actually have to pay ?
- She is allowed to pay her insurance over 12 months without any extra charges.

Period without claim	Discount
1 year	30%
2 years	40%
3 years	50%
4 or more years	60%

How much does Claire pay each month ?



10. \*Look back to the Travel Insurance table on page 24.



Mr & Mrs Cole take their 2 children, John aged 11, and Donna, aged 8 on a 10 night stay to the Far East.

How much in total will their travel insurance cost them ?

11. Mr Craig changed £750 into euros for his holiday at the rate of £1 = 1.42€.  
On holiday he spent 950€ and exchanged the remaining amount into pounds on his return.  
The exchange rate was then £1 = 1.45€.
- How many £'s did he have on his return ? (Answer to the nearest whole £).
  - On his return, would he have been better or worse off exchanging his euros to £'s if the exchange rate had remained at 1.42€ ? Explain.

# Answers

## Exercise 8.1

1. £451·80
2. £13·80
3. £11 700
4. £11·40

## Exercise 8.2

1. a £1122      b £18 722
2. £33·40
3. £38 950
4. Accept. (£25 more)

## Exercise 8.3

1. £34
2. £3125
3. a £420      b £1960
4. £330

## Exercise 8.4

1. £105
2. £144
3. a 7 hrs      b £189
4. a £368      b £55·20      c £92      d £515·20

## Exercise 8.5

1. a £456      b £506      c £26
2. a 36      b £1360      c £435
3. a £340      b £60
4. a £1190      b £148·75
5. a £28 000      b £9000      c 950

## Exercise 8.6

1. a £412·50      b £465
2. a £220      b £542·50      c £322·50
3. a £577·50      b £348      c £925·50      d £77·13
4. a £1701·50      b £1779      c Kean by £77·50

## Exercise 8.7

1. £291
2. £153
3. £619·20
4. £125·95
5. £688·50

## Exercise 8.8

1. a £140      b £480      c £225  
    d £640      e £192      f £3000
2. a 60%      b £190      c £19

## Exercise 8.9

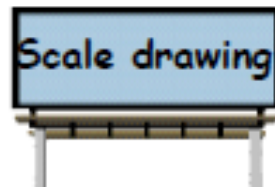
1. a £24·50      b £16·40      c £170      d £67·50
2. £115·50

1. a 58€      b 551€      c 13862€
2. a £50      b £330      c £1200
3. £31
4. £297

## Revision Exercise 8

1. a £132      b £5·50
2. £49 680
3. a £0      b £175
4. a £3000      b £25 000
5. a £357      b £76·50      c £68      d £501·50
6. a £536      b £2696      c £16
7. a £1612      b £432      c £2044      d £170·33
8. a £58·08      b £75·71
9. a 40%      b £408      c £34
10. £255
11. a £79      b Yes, he gets more € for his £'s

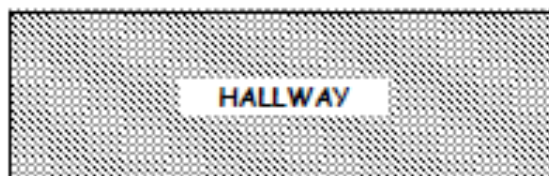
# Scales and Bearings



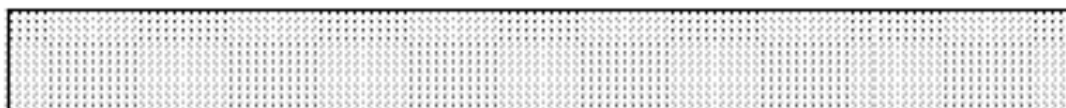
## Exercise 1 (You will need a ruler for this exercise).

1. This scale drawing of a hallway is drawn to the scale of  $1 \text{ cm} = 2.5 \text{ m}$ .

- (a) Measure the length and breadth of the hallway in the scale drawing.  
(b) Calculate the real length and breadth of the hallway.



2. This red carpet for a movie premier has been drawn using a scale of  $1 \text{ cm} = 3 \text{ m}$ .



- (a) Calculate the real width of the carpet.  
(b) Calculate the real length of the carpet.

3. A field has been drawn using a scale of  $1 \text{ cm} = 7 \text{ m}$ .

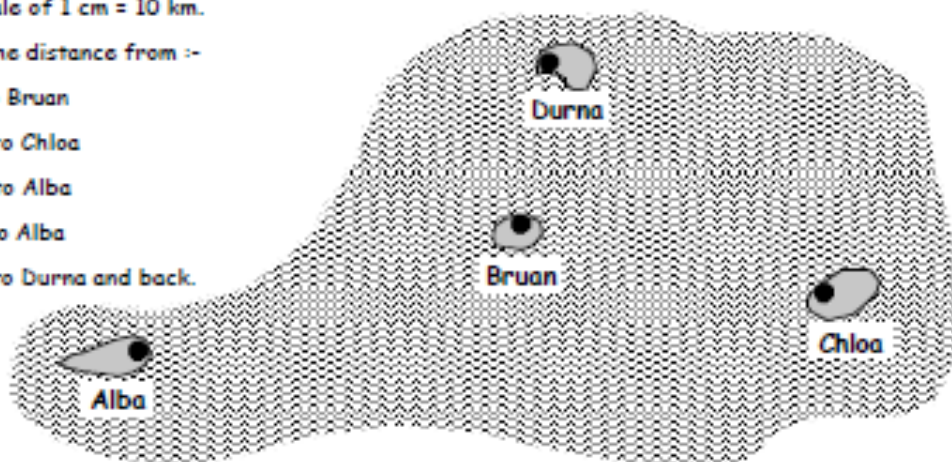
- (a) Calculate the real length of the field.  
(b) Calculate the real width of the field.  
(c) Calculate the real length of the diagonal path.



4. The map shows a group of islands drawn using a scale of  $1 \text{ cm} = 10 \text{ km}$ .

Calculate the distance from :-

- (a) Alba to Bruan  
(b) Bruan to Chloa  
(c) Durna to Alba  
(d) Chloa to Alba  
(e) Bruan to Durna and back.

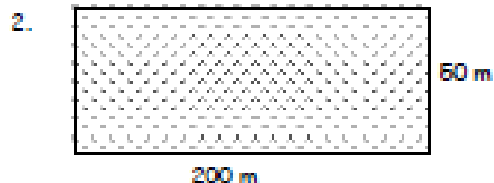
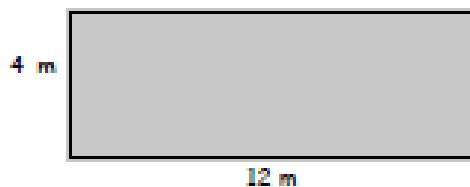


# Scales and Bearings

## Exercise 2 (You will need a ruler for this exercise).

1. This is the sketch of a rectangular room.

Make an accurate drawing using a scale of  $1\text{ cm} = 2\text{ m}$ .

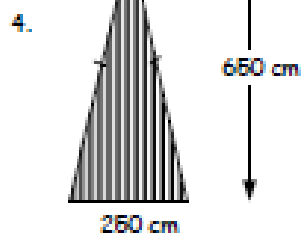
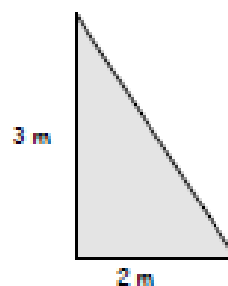


Shown is a large rectangular field.

Make a scale drawing using a scale of  $1\text{ cm} = 20\text{ m}$ .

3. The sail of a model yacht is as shown. It is in the shape of a right angled triangle

Make a neat scale drawing of the sail using a scale of  $1\text{ cm} = 25\text{ cm}$



Each vane of a windmill is in the shape of an isosceles triangle.

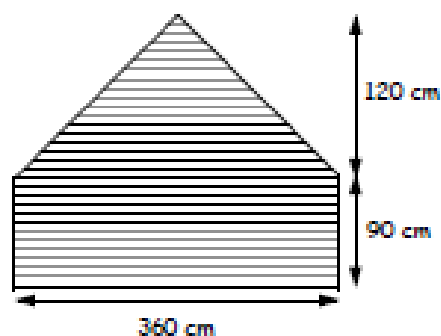
Its dimensions are as shown.

Make a scale drawing of the sail using a scale of  $1\text{ cm} = 50\text{ cm}$ .

5. This sketch shows the side view of a childrens garden house.

It consists of an isosceles triangle on top of a rectangle.

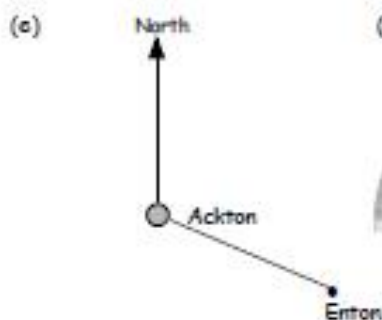
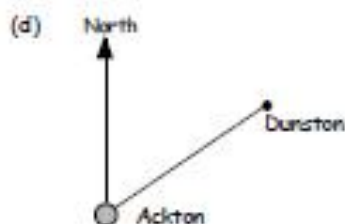
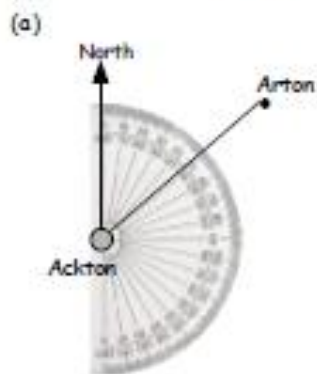
Make a scale drawing of it using a scale of  $1\text{ cm} = 30\text{ cm}$



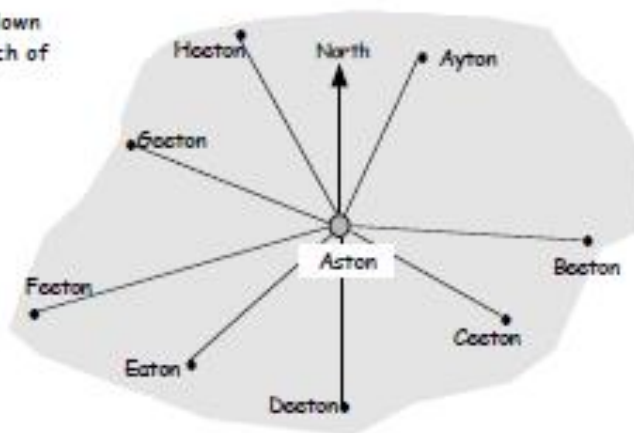
# Scales and Bearings

## Exercise 5 (You will need a protractor for this exercise).

1. Write down the 3-figure bearing for each diagram below :-



2. Use a protractor to write down the 3 figure bearing of each of these towns from Aston.



# Scales and Bearings

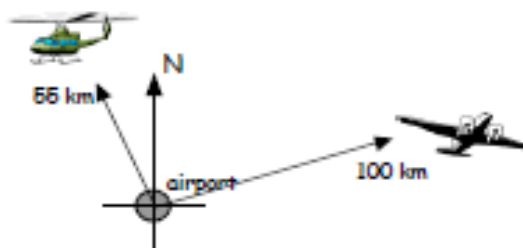
3. Draw (using a protractor) a diagram representing a bearing of  $070^\circ$ .

4. An aeroplane leaves an airport and flies 100 km on a bearing of  $080^\circ$

A helicopter leaves the airport at the same time on a bearing of  $330^\circ$  and flies for 55 km.

(a) Make a scale drawing of the two journeys using a  $1 \text{ cm} = 10 \text{ km}$  scale.

(b) Calculate the distance between the two aircraft.



5. A boat leaves port and travels 50 km on a bearing of  $060^\circ$ .

At this point the boat changes course to a bearing of  $110^\circ$  and sails for 60 km.

The boat then develops engine trouble and has to sail directly back to port.

The captain estimates the boat will sail for 75 km before the engine fails completely.

Will the boat make it back to port before engine failure?

(Hint : make a scale drawing of the journey).



## Revision Exercise (You will need a ruler and protractor for this exercise).

1. Shown is a truck drawn to a scale of  $1 \text{ cm} = 3 \text{ m}$ .

(a) Measure the length and height of the model truck.

(b) Calculate the length and height of the real truck.

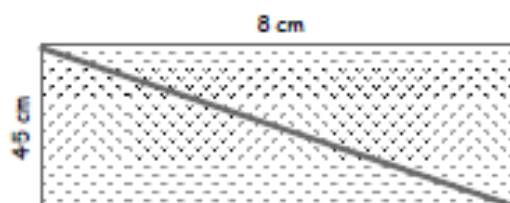


2. Shown is a sketch of a garden with its dimensions given. The scale is  $1 \text{ cm} = 4 \text{ m}$ .

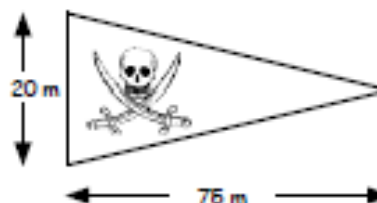
(a) Calculate the real length and breadth of the garden.

(b) Calculate the real length of the diagonal path.

(c) Calculate the perimeter of the garden.



3. Make an accurate scale drawing of this triangular pennant using a scale of  $1 \text{ cm} = 5 \text{ cm}$ .





# Scales and Bearings

4. Joy is travelling North East on Crow Road.

(a) What direction would Joy be travelling if she left the roundabout :-

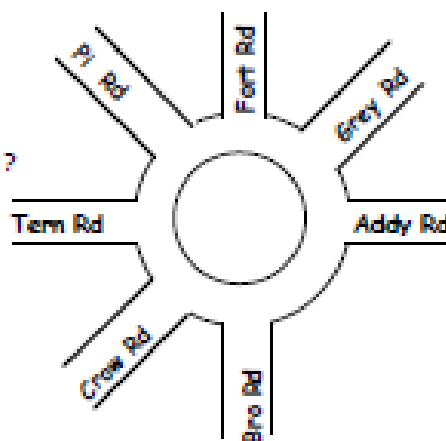
(i) on Addy Road (ii) on Tern Road (iii) on Bro Road ?

May is on Fort Road travelling towards the roundabout.

(b) What direction is May travelling ?

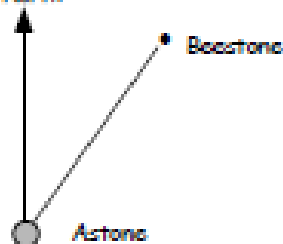
(c) How many degrees would she turn if she exited on

(i) Grey Road (ii) Bro Road (iii) Tern Road ?

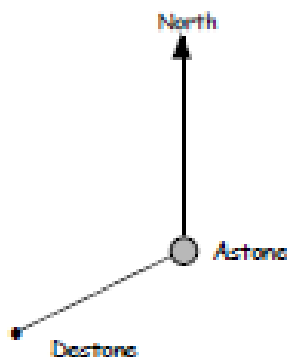


5. Use a protractor to measure the bearings from Astone :-

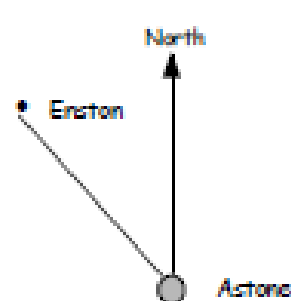
(a) North



(b) North



(c) North

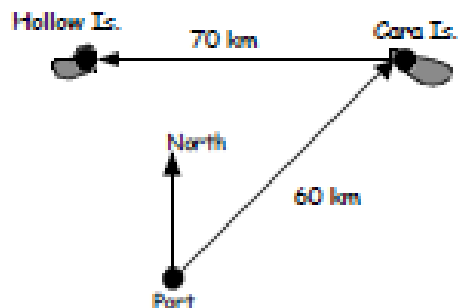


6. The sketch shows the voyage of a boat which sailed North East from Port to Cara Island, then West to Hollow Island.

(a) Make a scale drawing of the voyage using a scale of 1 cm = 10 km.

(b) How far away is the boat then from its starting point in kilometres ?

(c) What bearing would the boat have to take from Hollow Island to return to port ?



7. From an airport an jet takes a bearing of  $080^\circ$  and flies for 600 km. The pilot then changes course and flies 400 km on a  $300^\circ$  bearing.

(a) Make a scale drawing of the aeroplane's journey.

(b) Find the distance and bearing the pilot would need to take to fly directly back to the airport.



8. From its burrow a rabbit takes a bearing of  $060^\circ$  to get to the lettuce patch.

What bearing would the rabbit have to take to get from the lettuce patch back to its burrow ?

# Answers

---

## Chapter 17 Exercise 1

1. a length 7 cm breadth 3 cm  
b  $L = 17.5$  m  $b = 7.5$  m  
2. a 4.5 m b 36 m  
3. a 42 m b 17.5 m c 45.5 m  
4. a 65 km b 50 km c 80 km d 112 km  
e 52 km

## Chapter 17 Exercise 2

Check diagrams

## Chapter 17 Exercise 3

Check drawings

1. a 84 m b 54.6 m c 420 m d 5.5 m  
2. b Yes (distance 500 km)  
3. b 9.5 km

## Chapter 17 Exercise 4

1. Check diagram  
2. a  $270^\circ$  b  $180^\circ$  c  $135^\circ$  d  $315^\circ$   
3. a NE b SE c W  
4. a  $90^\circ$  b  $135^\circ$  c  $135^\circ$   
5. a (i) NE (ii) SW (iii) NW  
b (i) N (ii) SE (iii) NW  
c 6 secs

## Chapter 17 Exercise 5

1. a  $050^\circ$  b  $330^\circ$  c  $190^\circ$  d  $065^\circ$   
e  $115^\circ$  f  $025^\circ$   
2. Ayton  $025^\circ$  Beeton  $095^\circ$  Ceeton  $120^\circ$   
Deeton  $180^\circ$  Eaton  $230^\circ$  Feeton  $255^\circ$   
Geeton  $290^\circ$  Heeton  $330^\circ$   
3. check diagram  
4. a check drawing b 134 km  
5. a check drawing b no (dist 95 km)

## Chapter 17 Revision Exercise

1. a length 4.5 cm height 2.5 cm  
b length 13.5 m height 7.5 m  
2. a 32 m b 34 m c 86 m  
3. check drawing  
4. a (i) E (ii) W (iii) S  
b S  
c (i) Grey Rd (ii) Crow Rd (iii) Pi Rd  
5. a  $035^\circ$  b  $245^\circ$  c  $320^\circ$   
6. a check drawing b 50 km c  $147^\circ$   
7. a check drawing b 600 km  
8.  $240^\circ$