Home Learning 16.6 Date Due:.....

1 A dice is rolled 60 times. It lands on 6 fifteen times. Do you think that the dice is fair? Explain your answer.

2 A coin is tossed 30 times. It lands on Tails 14 times. Do you think it is fair? Explain your answer.

3 Think of a probability experiment that you can carry out. Record your results and comment on whether the results are what you expected.

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Home Learning 13.1 Date Due:.....

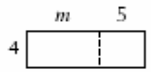
1 Expand each of the the following.

a $2(3a + 4b)$ **b** $3(5t - 2k)$ **c** $6(n + 2p)$ **d** $5(2q - p)$

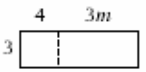
e $4(7 + w)$ **f** $2(5 + 2m)$ **g** $5(3y - t)$ **h** $7(2x - 3n)$

2 Find the area of each of the rectangles below.

a



b



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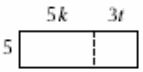

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Mark: .....

Home Learning 13.2 Date Due:.....

1 Solve the following equations:

a $4x = 16$ **b** $3x = 30$ **c** $2m = 18$ **d** $5n = 35$

2 Solve the following equations:

a $6n + 1 = 19$ **b** $4x - 3 = 21$ **c** $2m + 3 = 11$ **d** $9x - 2 = 25$

3 Solve the following equations:

a $4(3t + 1) = 28$ **b** $3(4m + 5) = 39$ **c** $4(5m + 3) = 72$ **d** $5(2k + 3) = 65$

e $3(3t - 5) = 12$ **f** $5(2x - 3) = 30$ **g** $4(2t - 5) = 36$ **h** $3(5x - 4) = 18$

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Mark: .....

Home Learning 16.5 Date Due:.....

1 Look at each set of data and the average which has been calculated. Say whether you think it is a suitable average to use.

a 1, 2, 4, 8, 10, 11 Mean = 6 **b** 2, 2, 2, 2, 4, 6, 8 Mode = 2

c 2, 4, 6, 8, 10, 11, 11 Median = 8 **d** 2, 2, 2, 3, 5, 6, 6 Mode = 2

e 1, 2, 4, 6, 8, 8, 8 Median = 6 **f** 1, 28, 29, 31, 34, 39 Mean = 27

2 Look at each set of data. Decide whether the range is suitable or not. Explain your answer.

a 2, 3, 6, 8, 9, 10 **b** 1, 1, 1, 1, 20 **c** 2, 2, 4, 6, 8

d 1, 2, 5, 7, 8, 9 **e** 1, 2, 2, 2, 8, 9, 9, 20

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Home Learning 16.4 Date Due:.....

1 The table shows the mean and range of a set of golf scores per hole for Emily and Lorna.

	Emily	Lorna
Mean	4.2	6.1
Range	4	3

Compare the mean and range and explain what they tell you.

2 The table shows the median and range of weekly sales of two magazines.

	Teen Mag	*Only 13*
Median	12 000	14 000
Range	1000	3500

Compare the median and range and explain what they tell you.

3 The table shows the mode and range of goals scored by two hockey teams.

	Rotherfield	Shefham
Mode	3	5
Range	1	4

Compare the mode and range and explain what they tell you.

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Mark: .....

Home Learning 13.3 Date Due:.....

1 Grandma is seven times as old as her grandson is now. If their ages add up to 96, how old is Grandma?

2 The sum of two consecutive odd numbers is 152. Find the numbers.

3 Mark weighs 7 kg more than his brother. Their total weight is 71 kg. How much does Mark weigh?

4 Phoebe's Auntie Ann is three times as old as Phoebe. The sum of their ages is 52. Find their ages.

5 I think of a number, add 8 to it, double the answer, subtract 10 and I end up with 16.

i If the number I first thought of was n, write down an equation that involves n and 16.

i Solve the equation to find the number I first thought of.

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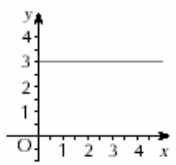
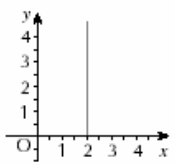
Home Learning 13.4 Date Due:.....

1 State the equation of each straight line shown below.

a



b



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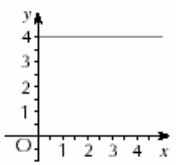

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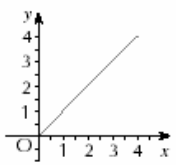

2 Draw sketch graphs of each of the following.

a $y = 5$ **b** $x = 4$ **c** $y = 2x$

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Home Learning 16.3 Date Due:.....

1 For each frequency table, construct a bar chart.

a Bus journey times.

Time (minutes)	Frequency
0–20	12
21–40	15
41–60	9
61–80	4

b Mean temperatures of 37 European regions

Average temperature (°C)	Frequency
0–5	4
6–10	8
11–15	12
16–20	9
21–25	4

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Home Learning 16.2 Date Due:.....

1 Find the median of each of the following sets of data.

a 7, 5, 2, 3, 9, 2, 5, 7, 6

b 46, 37, 25, 14, 41, 27, 29, 33, 25

c 6, 1, 10, 15, 11, 15, 7

d 100, 95, 73, 67, 34, 121, 164, 241, 503

2 Find the median of each of the following sets of data.

a 21, 17, 25, 18, 14, 20

b 7, 2, 8, 5, 3, 1, 4, 7, 9, 5

c 204, 153, 88, 157

d 28, 33, 49, 56, 51, 104

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Mark: .....

Home Learning 13.5 Date Due:.....

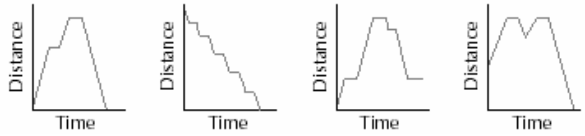
1 An express parcel delivery agency charges £5 for any delivery up to a mile, then another £4 for each mile after that up to 4 miles. For journeys over 4 miles they charge an extra £1 per mile over the 4.

a How much is charged for the following journeys:

i half a mile **ii** 1 mile **iii** 2 miles **iv** 4 miles **v** 7 miles **vi** 12 miles?

Draw a step graph to show the charges for journeys up to 12 miles.

2 Look at each of the following graphs and write a short story to go with each graph.



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Home Learning 16.1 Date Due:.....

1 Complete a frequency table for the following temperatures (°C). Use class intervals of 0–10, 11–20, 21–30, 31–40.

12	17	32	30	10	22	26	8	16	5
14	33	24	19	6	30	25	40	2	18

2 Complete a frequency table for the ages (years) of a group of people. Use class intervals of 20–24, 25–29, 30–34, 35–40.

24	28	25	36	30	37	33	22	27	39
22	29	34	21	31	30	29	21	32	35

3 Complete a frequency table for the marks that students scored in a test. Use class intervals of 0–10, 11–20, 21–30, 31–40.

25	32	10	39	19	9	38
24	32	35	11	21	34	22

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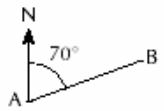
Home Learning 15.7 Date Due:.....

1 Write down each of the following compass bearings as three-figure bearings:

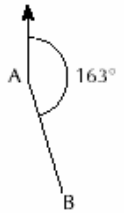
a north **b** east **c** north-west **d** south-east

2 Write down the three-figure bearing of B from A for each of the following:

a



b



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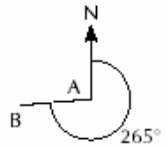

d

3 Draw a rough sketch to show each of the bearings below (mark the angle on each sketch):

a From a ship P, the bearing of a harbour Q is 070°.

b From a helicopter S, the bearing of a landing pad T is 100°.

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Home Learning 13.6 Date Due:.....

1 Rewrite each of the following formulae as indicated:

a $A = DK$

Make K the subject of the formula.

b $T = 3m + n$

Make m the subject of the formula.

c $F = 2T - k$

Make T the subject of the formula.

d $Q = 4g - 7$

Make g the subject of the formula.

2 $d = 8p - 3$

a Find d when $p = 11$.

b Make p the subject of the formula.

c Find p when $d = 53$.

3 $T = m + 3k$

a Find T when $m = 6$ and $k = 5$.

b Make k the subject of the formula.

c Find k when $T = 23$ and $m = 5$.

4 $y = 6x - t$

a Find y when $x = 3$ and $t = 8$.

b Make x the subject of the formula.

c Find x when $y = 21$ and $t = 3$.

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Home Learning 15.5 Date Due:.....

Construct the triangle XYZ with XY = 7 cm, XZ = 6 cm and YZ = 5 cm.
Construct an equilateral triangle with sides of length 4 cm.

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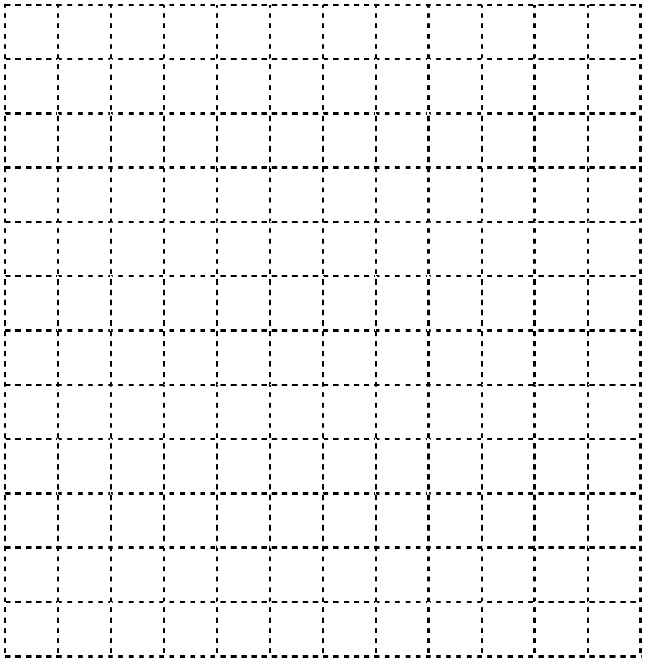

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Home Learning 14.1 Date Due:.....

1 Two consecutive numbers add up to 25. What are the numbers?

2 Two consecutive odd numbers add up to 20. What are the numbers?

3 Two consecutive even numbers add up to 38. What are the numbers?

4 A map has a scale of 1 cm to 4 km. The distance between two places on the map is 2.5 cm. What is the actual distance between the two places?

5 Which is the greater length, 3 feet or 1 metre? Use the fact that 1 foot = 30 centimetres.

6 Which is the greater, 9 pints or 5 litres? Use the fact that 1 litre = 1.75 pints.

7 Which is the greater mass, 4 kg or 9 pounds? Use the fact that 1 kg = 2.2 pounds.

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Home Learning 14.2 Date Due:.....

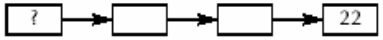
1 Two numbers add up to 37. One of the numbers is 15. What is the other number?

2 The sum of two numbers is 21 and the difference is 7. What are the numbers?

3 Two parcels weigh 11 kg altogether. The heavier parcel weighs 3 kg more than the lighter parcel. How much does each parcel weigh?

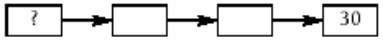
4 Two pieces of wood are made from a plank 4 metres long. One piece is 1 metre shorter than the other piece. How long is each piece?

5 I think of a number, double it and add 4. The answer is 22.



Copy and complete the flow chart. Then work out the number.

6 I think of a number, multiply it by 4 and subtract 6. The answer is 30.



Copy and complete the flow chart. Then work out the number.

7 I think of a number divide it by 2 it and add 7. The answer is 25

Copy and complete the flow chart. Then work out the number.

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Mark: .....

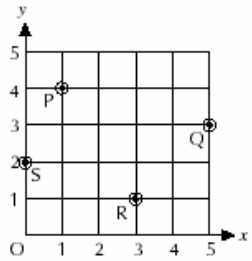
Home Learning 15.4 Date Due:.....

1 Write down the coordinates of the points P, Q, R and S on the grid.

2 **a** Draw a grid as in Question 1 and plot the points A(1, 4), B(5, 4), C(5, 1) and D(1, 1).

b Join the points to form the rectangle ABCD.

c What are the coordinates of the mid-point of AB?

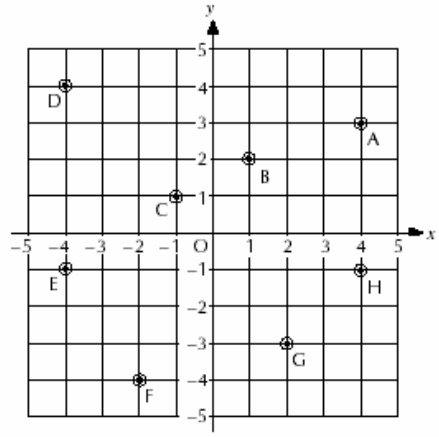


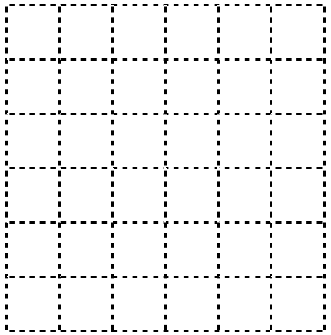
3 Write down the coordinates of the points A, B, C, D, E, F, G and H on the grid.

4 **a** Draw a grid as in Question 3 and plot the points P(1, 4), Q(4, 2) and R(1, –4)

b The points form three vertices of a kite PQRS. Plot the point S and draw the kite.

c Write down the coordinates of the point S.





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Home Learning 15.3 Date Due:.....

1 The lines below are drawn using a scale 1 cm to 4 m. Write down the length each line represents.

a ———————

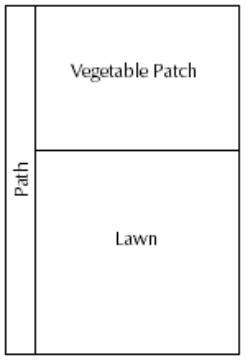
b ———————————————

c ————————————

d ——————————————

e ————————————————————

2 The diagram shown is a scale drawing of Mr Peters' garden:



a Find the actual dimensions of the garden.

b Find the actual dimensions of the lawn.

c Find the actual dimensions of the vegetable patch.

d Find the actual area of the path.

Scale: 1 cm to 2 m

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Home Learning 14.3 Date Due:.....

1 Copy and complete the following number problems, filling in the missing digits:

a
$$\begin{array}{r} 2\square \\ +\ \square 3 \\ \hline 7\ 6 \end{array}$$

b
$$\begin{array}{r} 9\square \\ +\ \square 4 \\ \hline 1\ 1\ 9 \end{array}$$

c
$$\begin{array}{r} \square\ 9 \\ -\ 1\square \\ \hline 2\ 8 \end{array}$$

d
$$\begin{array}{r} \square 7 \\ \times\ \ 2 \\ \hline 3\ 4 \end{array}$$

2 Write down an example to show that when you double a whole number, you get an even number.

3 Write down two examples to show that when you halve an even number, you may get an even number or you may get an odd number.

4 Which is the better value for money?

a Six pies for £3 or ten pies for £6

b Twelve pencils for £1.44 or ten pencils for £1.10

5 A recipe for four people uses 200 g of flour. How much flour would the recipe need for

a eight people? **b** six people?

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Home Learning 14.4 Date Due:.....

1 A family spends £30 at the cinema on tickets and £5 on refreshments. What proportion of the spending is on refreshments?

2 A bus travels at 12 miles per hour:

a How far will it travel in 15 minutes? **b** How far will it travel in 20 minutes?

c How far will it travel in 35 minutes? **d** How far will it travel in 1 hour 20 minutes?

3 Five burgers cost £3.50. What will 15 burgers cost?

4 Three plants cost £18. What will six plants cost?

5 10 pens cost £12. What will one pen cost?

6 1 kg is approximately equal to 2.2 pounds:

a How many pounds are equal to 4 kg? **b** How many kilograms are equal to 11 pounds?

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Home Learning 14.5 Date Due:.....

1 Simplify each of these ratios.

a 8:4 **b** 5:15 **c** 14:7 **d** 12:9 **e** 15:5 **f** 18:12 **g** 3:12

h 24:18 **i** 4:16

2 **a** £10:£8 **b** 33 m:3 m **c** £1:£5 **d** 10 kg:4 kg **e** 5000 mm:1000 mm

f 2 hours:8 hours

3 **a** 1 hour:20 minutes **b** 2 weeks:2 days **c** 2 metres:80 cm

4 In a test Charlotte scores twice as many as Eleanor. Altogether they score 36 marks. How many marks does each girl score?

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