

Perimeter as a function

- 1 Write lengths and heights that make Perimeter of rectangle = 12. (Height is the length of the vertical side.)

Length	Height
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- 2 Plot the values on the grid on a new copy of Resource sheet 1.
Use a coloured pen to join all the points. Label the line Perimeter = 12.
- 3 From the graph, estimate other length-and-height pairs that make Perimeter = 12.
- 4 Write lengths and heights that make Perimeter of rectangle = 24.

Length	Height
.....
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.....

Plot and join the points. Label the line Perimeter = 24.

- 5 From the graph, estimate other length-and-height pairs that make Perimeter = 24.
Choose some values that are not whole numbers.
Check your answers with a calculator.
- 6 Roughly sketch on the grid where the line Perimeter = 20 should be.
Explain how you chose the place and shape of the line.
- 7 Look at your graphs from Notesheet 1. Compare the lines for area and the lines for perimeter. Describe the difference.

BIG HITCH

3 7 5
8 8 6
6 2 1 5 7 2 7 4 2
7 7 2 6 1 8 5 2 4
1 8 6
8 4 1

4 3 9
5 3 5
2 7 4 2
1 8 5 2 4
1 6 3
3 9 4

Find

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means - find a VERTICAL PAIR whose

numbers multiply together to make 10. $5 \times 2 = 10$

5	2
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Find

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18 means - find a HORIZONTAL

1	6	3
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 $1 \times 6 \times 3 = 18$

TRIPLE whose numbers multiply together to make 18.

Find:

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Devise your own set of questions.

DOZEN

Complete as much of the table as possible.

Each expression uses up to three of the digits at the top of the column.

Digits may not be repeated in an expression.

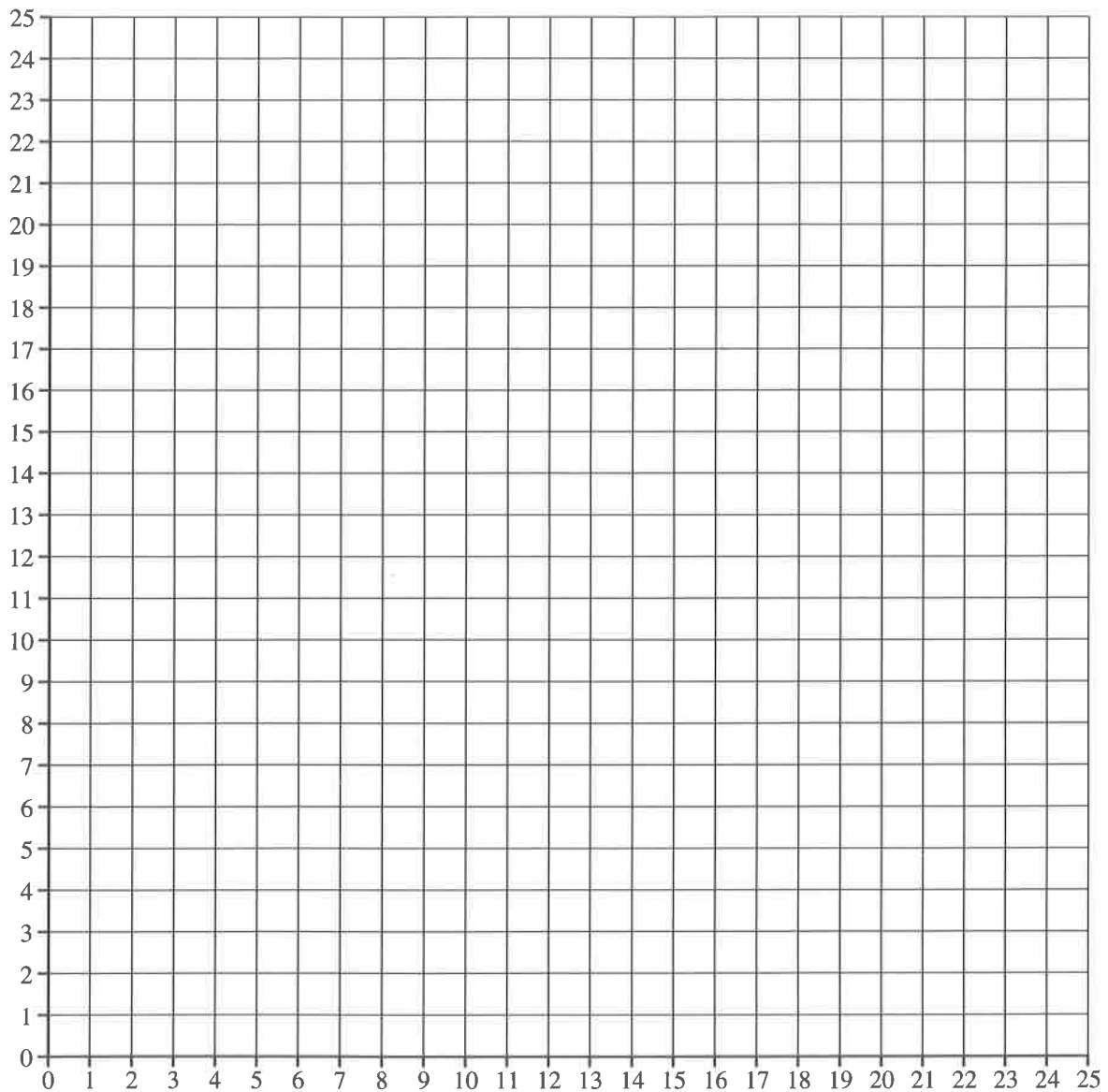
Expressions may not be repeated in a column.

ODD NUMBER	2, 3, 8	5, 1, 4	3, 6, 4
EVEN NUMBER			
PRIME NUMBER BETWEEN 10 AND 40	23		43 - 6
PRIME NUMBER BETWEEN 50 AND 100			
SQUARE NUMBER			
CUBE NUMBER			
DIVISOR OF 36	8 - 2		
TRIANGULAR NUMBER			
NUMBER LESS THAN 12			
NUMBER MORE THAN 60		51 × 4	
NUMBER BETWEEN 10 AND 20			
MULTIPLE OF 3			
MULTIPLE OF 4			
MULTIPLE OF 5			36 ÷ 4

10

Rectangle functions

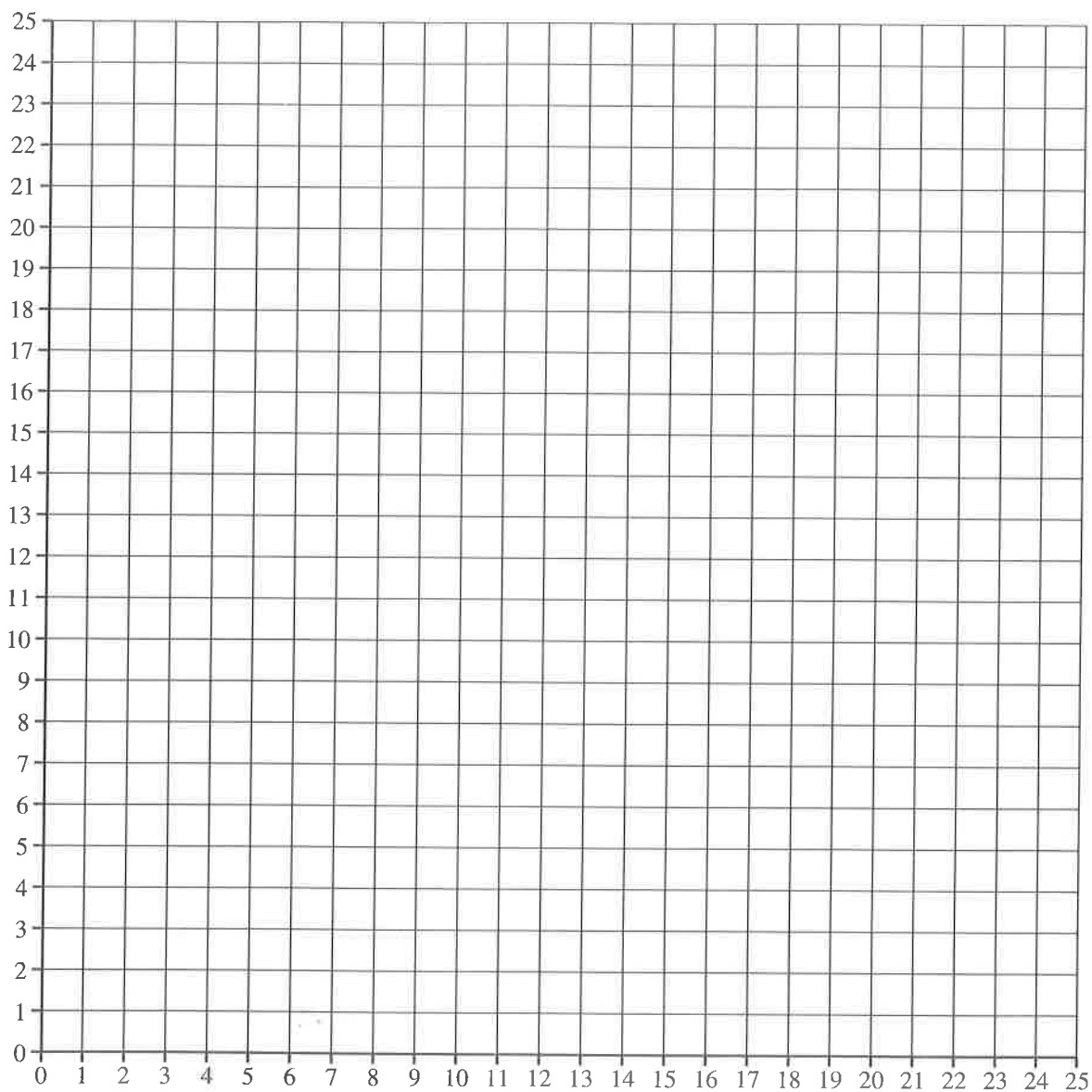
Resource sheet 1



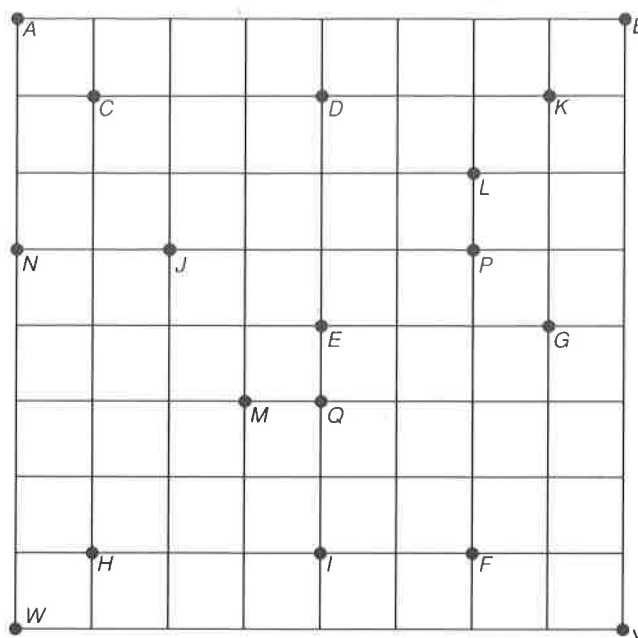
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Rectangle functions

Resource sheet 1



Area grid



The area of each small square in the diagram is $x\text{ cm}^2$.

1. Name the shape of each figure:

- (a) *IBA* (c) *CKFI* (e) *CJHN*
 (b) *JDPQ* (d) *JLGM* (f) *NDPE*

2. Find the area of each figure in terms of x . Count squares and parts of squares.

- (a) *ABYW* (e) *DPJ* (i) *CKI*
 (b) *CDIH* (f) *DPQJ* (j) *NJFI*
 (c) *CKGE* (g) *NPFH*
 (d) *ANP* (h) *AKYW*

3. What is the length of the side of a square:

- (a) if it has area 9 cm^2 ? (b) if it has area $x\text{ cm}^2$?

4. From the diagram, find the distance between:

- (a) *M* and *Q* (c) *C* and *D* (e) *C* and *H*
 (b) *N* and *J* (d) *A* and *N* (f) *B* and *Y*

5. Find the perimeter of:

- (a) *DKGE* (b) *CDIH* (c) *ABYW*

6. A circle is drawn, with centre *E*.

- (a) If it passes through *D*, name two other points it also goes through. and
 (b) If it passes through *B*, name three other points it also goes through. and and

7. State the shortest distance along the lines of the grid from:

- (a) *H* to *G* (c) *F* to *E* (e) *E* to *K*, passing through *L*
 (b) *C* to *I* (d) *N* to *J*, passing through *M*

8. A path, $11\sqrt{x}\text{ cm}$ long, links *D* and *M*.

- (a) Draw it.
 (b) Name the lettered points you pass through