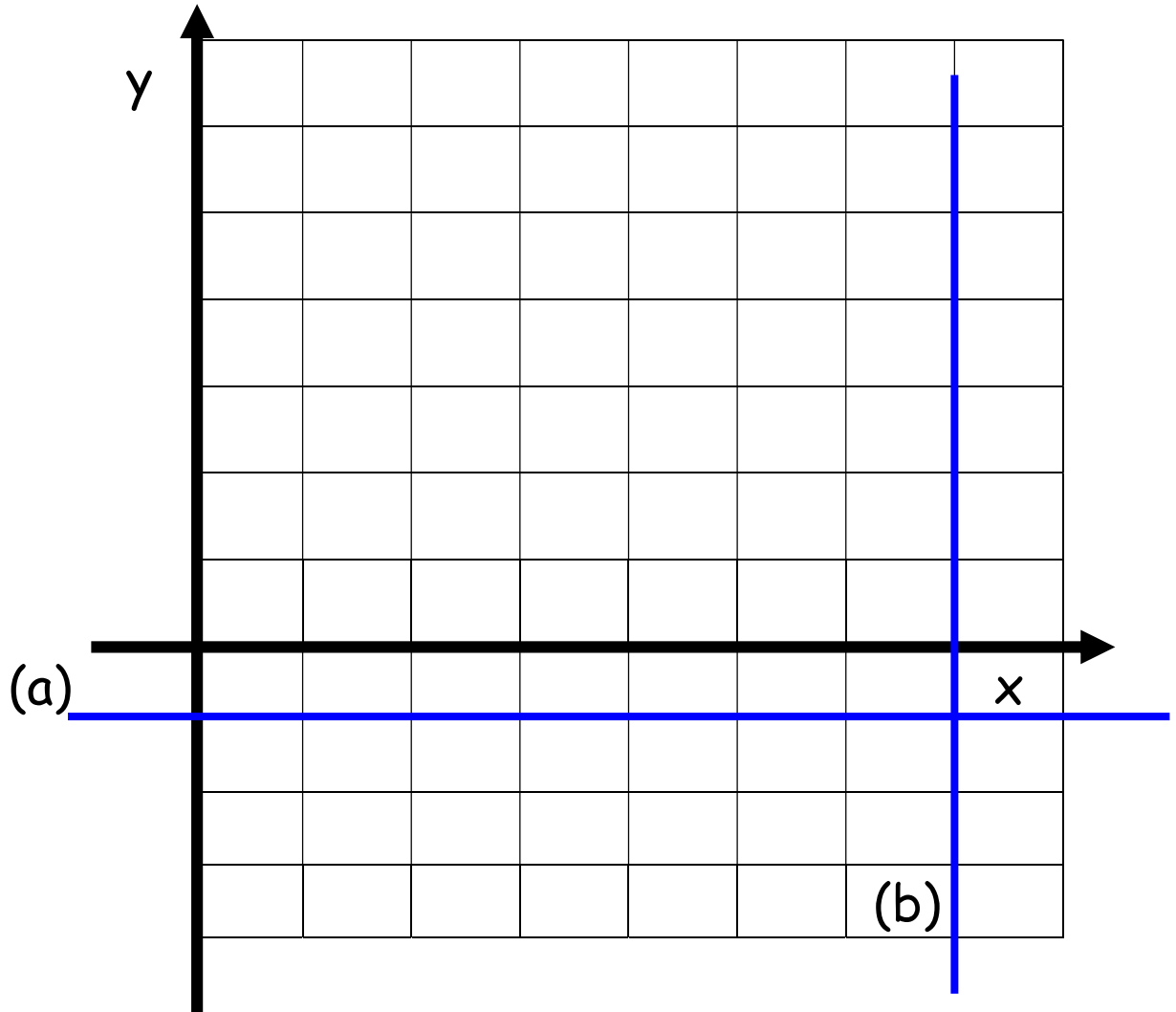# Revision Booklet 3

<u>Topics</u>

1. Plotting Linear Graphs
2. Identify y = mx + c Equations
3. Similar Shapes
4. Scattergrams
5. Ratio
6. Simultaneous Equations
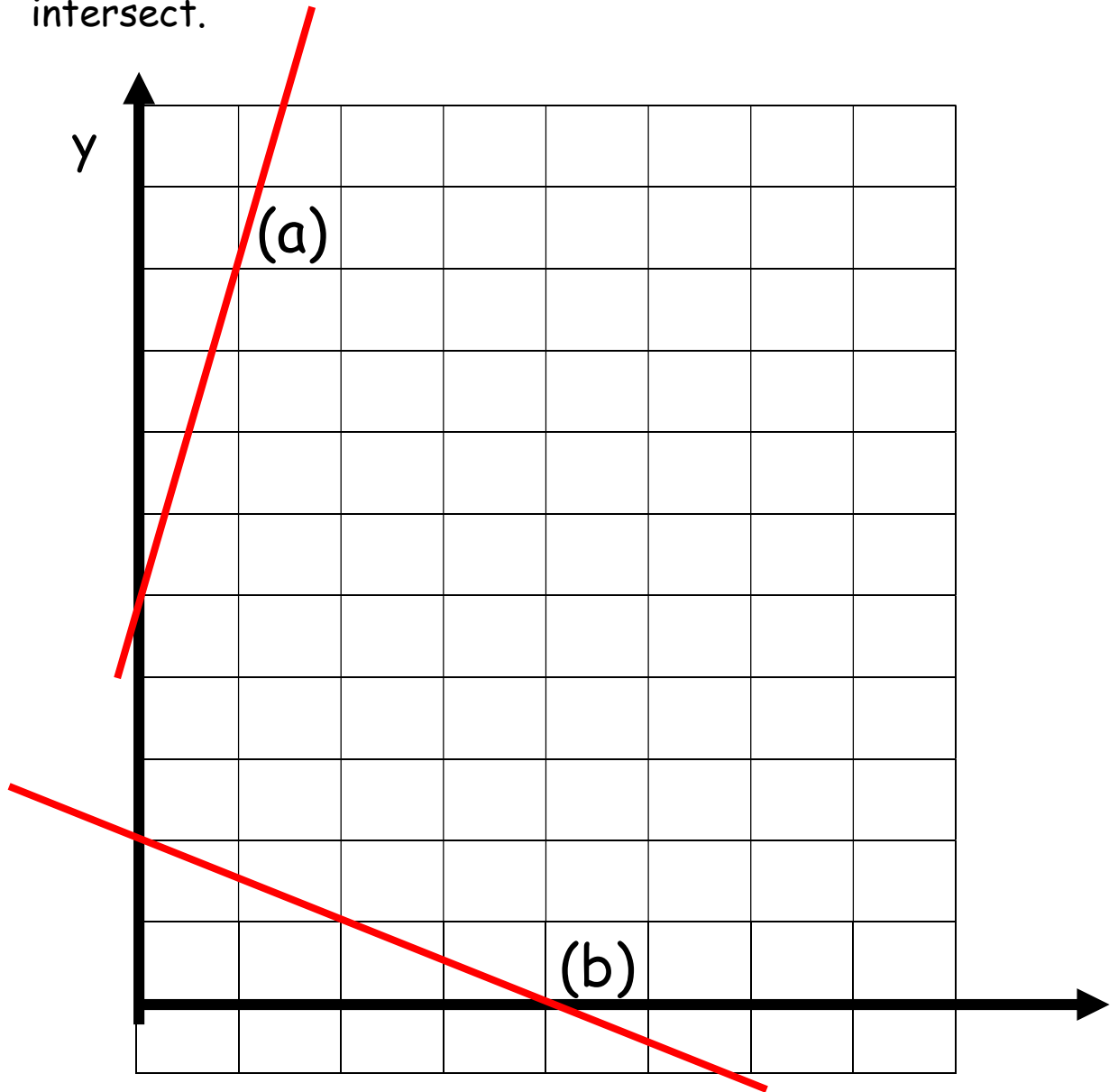
Name _____

1. Plot the graph of y = 2x – 3 and y = 6 – x and give the coordinates of the points where the graphs intersect.

(a)

y

x

(b)

2. Write down the equations of the lines (a) and (b) on the above grid.

3. Plot the graph of y + 2x = 8 and y – 2x = 6 and give the coordinates of the points where the graphs intersect.

(a)

(b)

4. Write down the equations of the graphs (a) and (b) on the above grid.

5. A real plane has a wing span of 15 metres and a scale model of this plane has a wing span of 30 cm. What is the ratio of the model to the real plane – m : r?

6. Calculate the lengths marked with the letters x and y on these two similar triangles

5 cm

y

8 cm

| Not to scale |

27.5 cm

x

22 cm
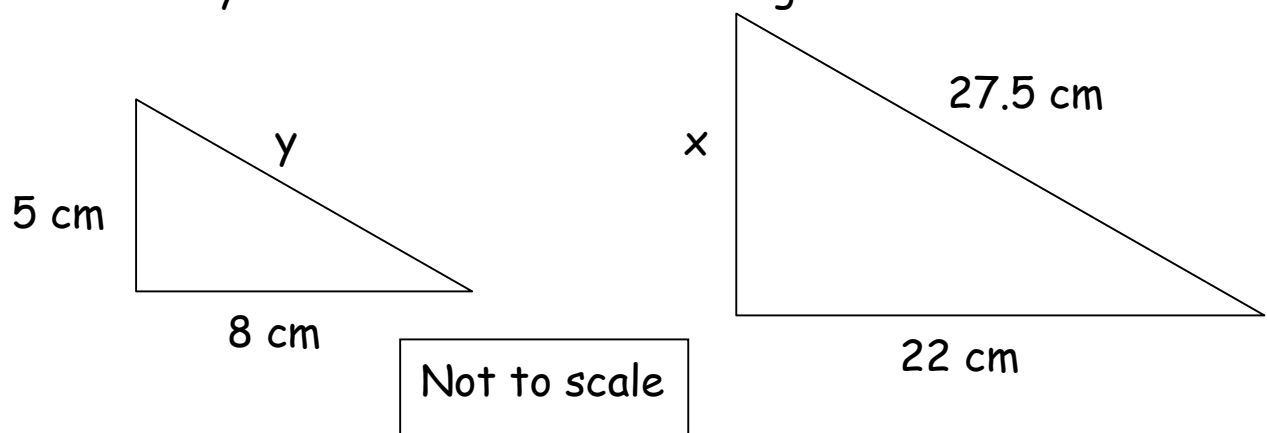
7. Using a sketch, explain how you would be able to see: (a) positive correlation, (b) negative correlation and (c) no correlation on a scattergram.

8. Using the grid below, draw a scattergram to show the information that gives hours spent revising each week and GCSE passes given in the table below. Describe the correlation.

Hours Revision	1	3	2	3	2	0	7	10	4
GCSE Passes	2	3	1	4	2	0	9	10	5
Hours Revision	4	7	6	6	7	7	10	3	1
GCSE Passes	3	8	6	5	8	6	9	2	2
Hours Revision	2	3	5	6	6	5	9	9	0
GCSE Passes	1	1	5	6	5	8	10	9	0

Hours of revision each week
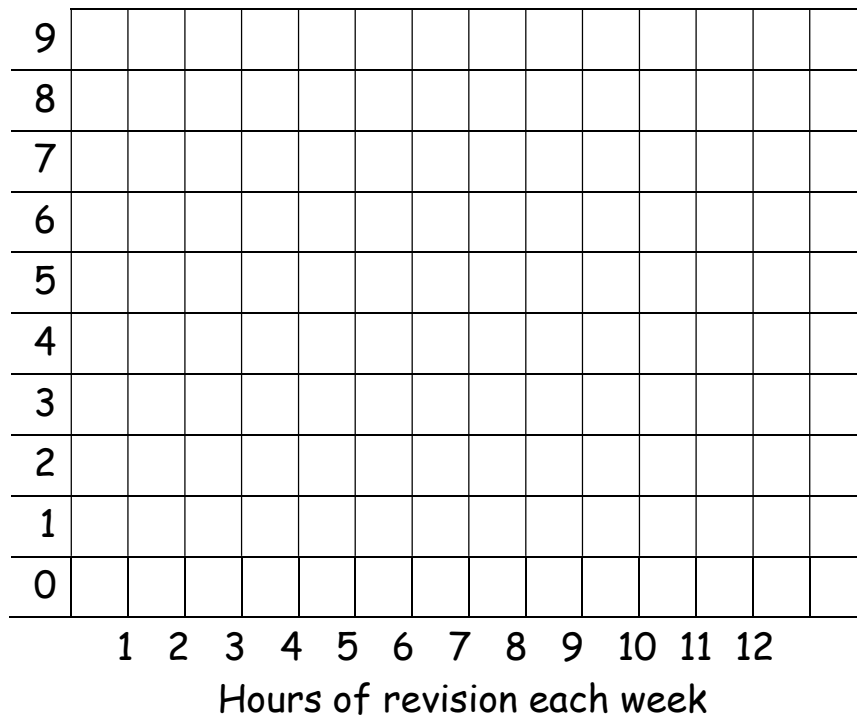
9. Share 120 into the ratio 1 : 3 : 8

10. Sue and Kath share the weekly rent for their flat into the ratio 5 : 8. If Sue pays £32.50, how much does Kath pay?

11. To make concrete, Sand, pebbles and cement are mixed in the ratio 4 : 3 : 1. How much of each material is required if 65 tonnes of concrete is required?

12. Solve the following simultaneous equations by using the substitution method:

a. $y = 2x + 3$
    $y = 3x$

b. $y = 4x - 5$
    $y = 6x - 13$

c. $y = x - 5$
    $y = 7 - x$

d. $y = 6x + 5$
    $y = 3x + 14$

e. $y = x^2 - 3x + 6$
    $y = 2x$

f. $y = x^2 + 3x - 12$
    $y = 2x$

13. Solve the following simultaneous equations by using the elimination method:

a. $2x + y = 5$
    $x + y = 3$

b. $3x + y = 19$
    $x - y = 1$

c. $3x - y = 2$
    $2x - y = -2$

d. $3x + y = 18$
    $4x + 2y = 26$

e. $3x + 2y = 40$
    $2x - y = 15$

f. $5x - 2y = 10$
    $3x - 3y = -12$

14. Using the grid below to draw graphs that will solve:

$$2x + 3y = 12$$
$$4x - 5y = 20$$