**Math Retake Test Paper 2**  **Marks: 60**

**Name**: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ **Time: 1hr. 15min.**

1. (a) Simplify

(i) [2]

(ii) [2]

(b) Solve

(i) [2]

(ii) [3]

1. (a) Aamir and Misbah travel to England.

Aamir exchanges rupees and receives

Misbah exchanges rupees into pounds at the same exchange rate.

How many pounds does Misbah receive? [2]

(b) Shahid goes to a bank to exchange some pounds for euros

He has which he wants to exchange.

The bank only gives euros in multiples of euros.

The exchange rate is Find

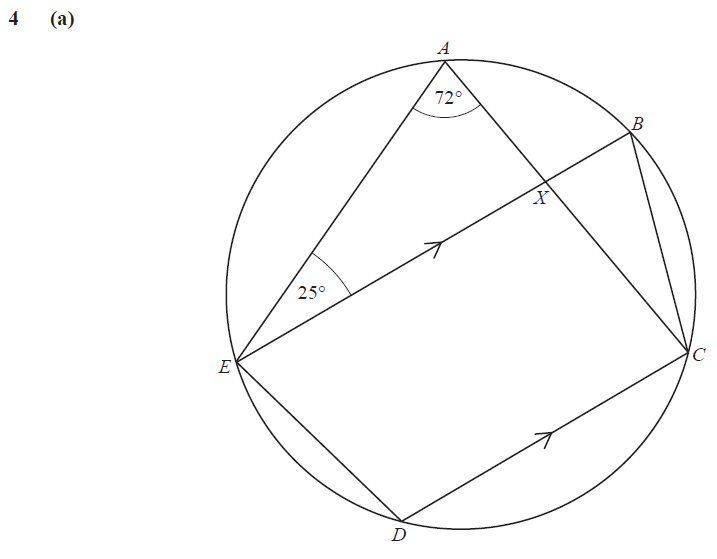
1. the number of euros he receives [2]
2. his change from . [1]

(c) Kamran buys a fridge and a freezer in a sale.

The sale offers off everything and he pays a total of

Before the sale, the freezer cost

What was the cost of the fridge before the sale? [3]



1. and are five points on the

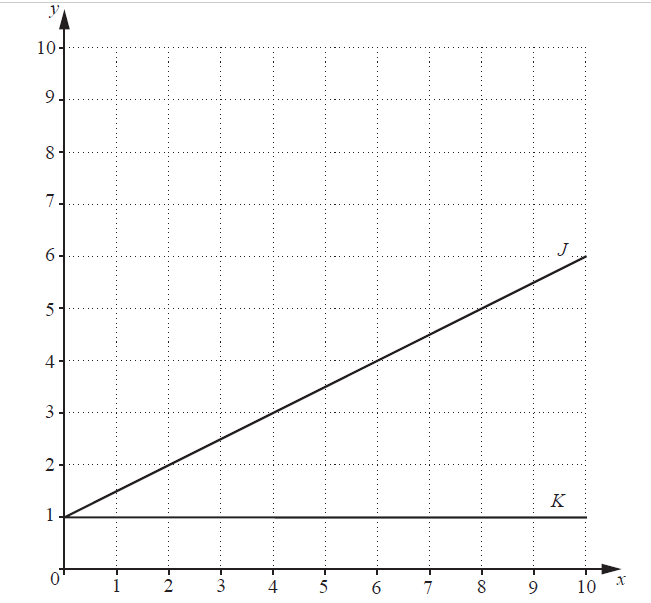
circumference of a circle. is parallel to .

Angle is and angle is .

is the intersection of and .

Find the angles

1. [1]
2. [1]
3. [1]
4. [1]
5. (a) Find the gradient of the line . [1]



(b) Write down the equation of line . [1]

(c) Draw a line , through such

that the area enclosed between

lines and is .[1]

(d) Find the equation of line . [2]

(e) The line is perpendicular to line at

Find the coordinates of the point

where line crosses the -axis. [2]

1. A pattern of numbers is given below.

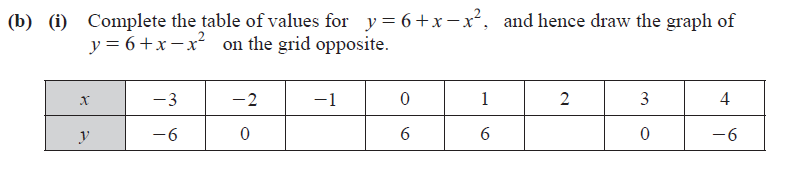
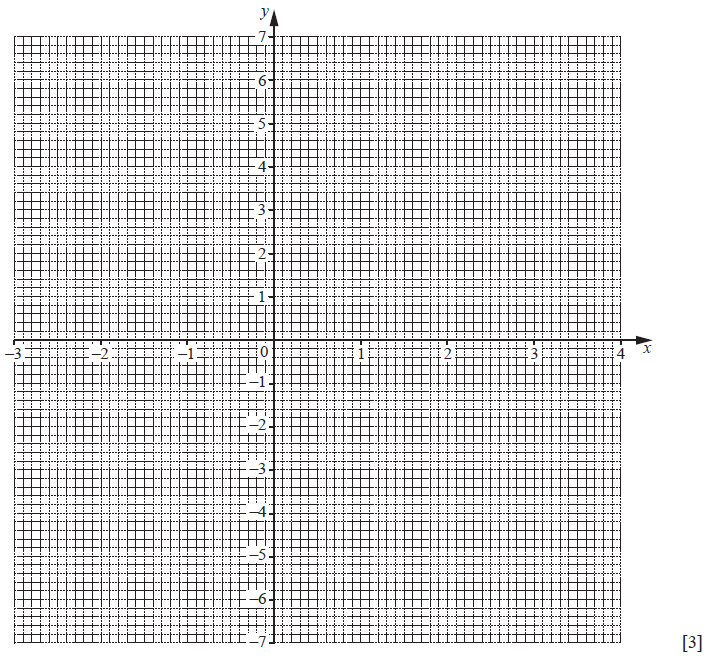
|  |  |
| --- | --- |
| Row 1 |  |
| Row 2 |  |
| Row 3 |  |
| Row 4 |  |

1. Write down Row 10. [1]
2. Adding the first two rows gives the result

Adding the first three rows gives the result

1. Write down the result of adding the first four rows. [1]
2. **Use the pattern** to write down
3. The value of . [1]
4. The number of rows that add up to . [1]
5. (a)
6. Find [2]
7. Given that find [2]

(b) (i) Complete the table of values for and hence draw the

graph of on the grid below.  **** [3]

(ii) Use your graph to estimate the maximum value of [1]

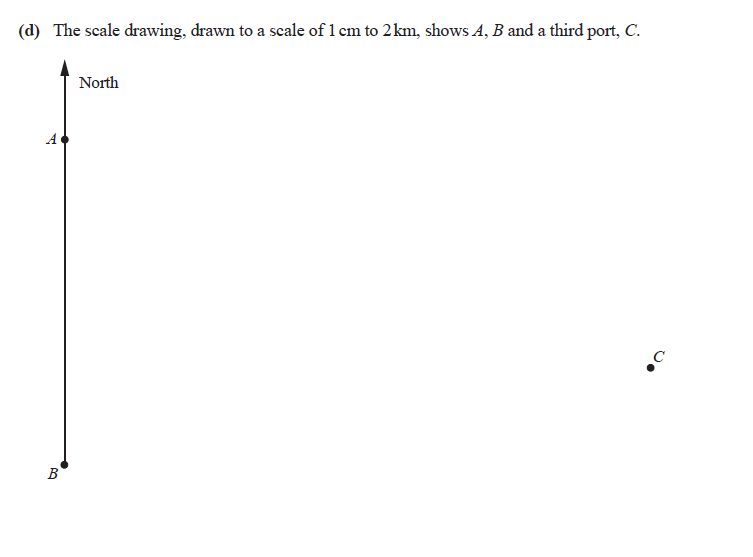
1. By drawing the line , find the approximate solutions to the equation [2]
2. The equation has a solution .

**By drawing a suitable line on the grid**, find the other solution.

Label your line with the letter *L.* [2]

1. Two ports, and , are apart and is due south of .

The scale drawing, drawn to a scale of 1 to 2 , shows and a third port .

****

1. A boat sails from on a bearing of .

When the boat has travelled 24 , it stops at the point .

Mark and label on the diagram. [2]

1. A second boat is located

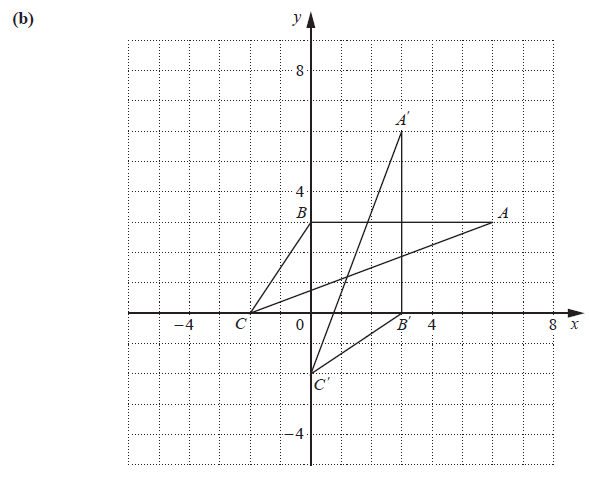
**I** less than 12 from

**II** nearer to than to .

Shade the region in which this second boat must lie. [3]

1. The point is the position of the second boat when it is as far as possible from *.*

Mark and label on the diagram and hence find the maximum possible distance between the two boats. [2]



1. The transformation T maps triangle onto triangle
2. Describe fully the transformation . [2]
3. The matrix represents the transformation .

Find the matrix . [2]

1. Triangle is mapped onto triangle by a reflection in the -axis.

Draw and label triangle . [2]

1. Triangle is mapped onto triangle by an anticlockwise rotation about the origin.
2. State the angle of rotation. [1]
3. Write the matrix for this rotation. [2]