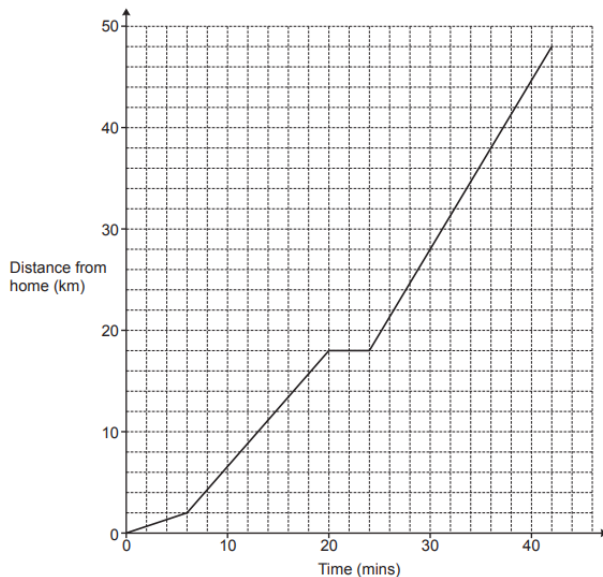


OCR GCSE Mathematics Calculator 2023 Higher Paper 1 Revision Worksheet

Question 4

The graph shows Taylor's journey from home to an airport. During the journey Taylor stops for petrol.



- (a) For how long did Taylor stop for petrol?
- (b) Taylor drives the same route back home from the airport at an average speed of 45 km/h. Taylor leaves the airport at 22:00. Work out the time when Taylor arrives home.
-

Question 5

- (a) Write an expression for the weight, in grams, of an object weighing x kilograms.
- (b) Write an expression for the area, in m^2 , of a garden of area $y \text{ cm}^2$.
-

Question 6

2 kg of carrots and 5 kg of potatoes cost £6.36
3 kg of carrots and 2 kg of potatoes cost £5.25

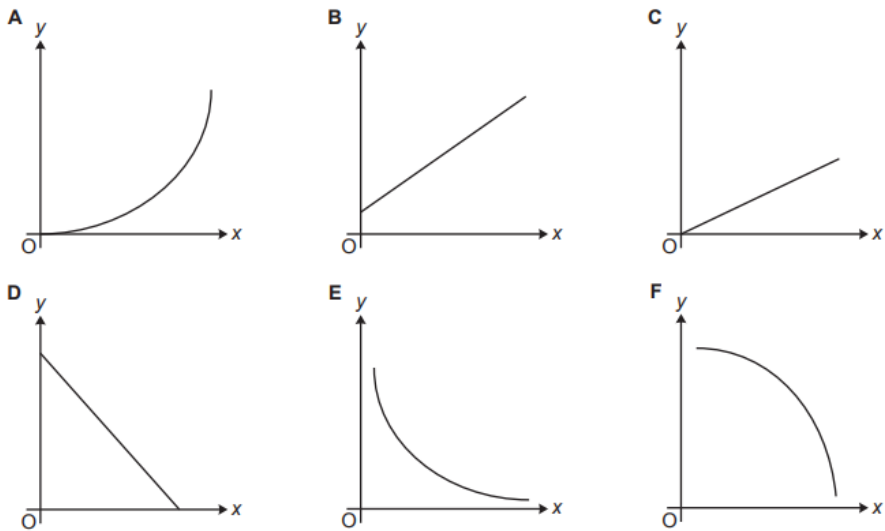
Find the cost of 1 kg of carrots and the cost of 1 kg of potatoes. **You must show your working.**

Question 7

Find all the possible integer values that satisfy the inequality $-10 < 3x + 2 \leq 8$.

Question 8

Here are sketches of six graphs, labelled A to F.



Write the letter of the graph that represents the following relationships.

- (a) y is directly proportional to x .

(a) [1]
- (b) y is inversely proportional to x .

(b) [1]

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Question 9

Here are two pieces of work.
Each shows a question and an incorrect solution.

For each part, describe the error made and write out a correct solution.

(a)

Question:
Factorise. $x^2 + x - 20$

Solution:
 $(x + 4)(x - 5)$

The error is
.....
A correct solution is

(b)

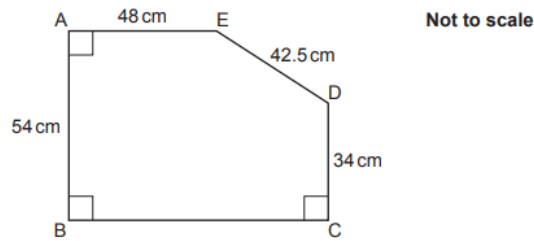
Question:
Solve. $4x + 5 = x + 2$

Solution:
 $4x + 5 = x + 2$
 $3x + 5 = 2$
 $3x = 5 - 2$
 $3x = 3$
 $x = 1$

The error is
.....
A correct solution is
.....

Question 10

The diagram shows a pentagon ABCDE.



Find the area of the pentagon.
You must show your working.

Question 11

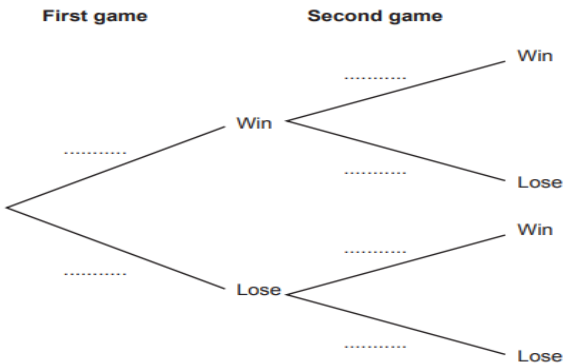
Riley and Sam are conducting surveys.
They are both given the same list of 12,463 people from which to select their sample.
Riley selects every 56th person. Sam selects every 64th person.

They both start counting from the first name in the list. Work out how many people will be selected to be in both surveys. **You must show your working.**

Question 12

In a computer game the player can either win or lose.
A student thinks the ratio of the probability of winning to the probability of losing is 2 : 3.
The student plays two games.

(a) Use the information to complete the tree diagram.



[3]

(b) Find the probability that the student wins at least one of the two games.

(b) [3]

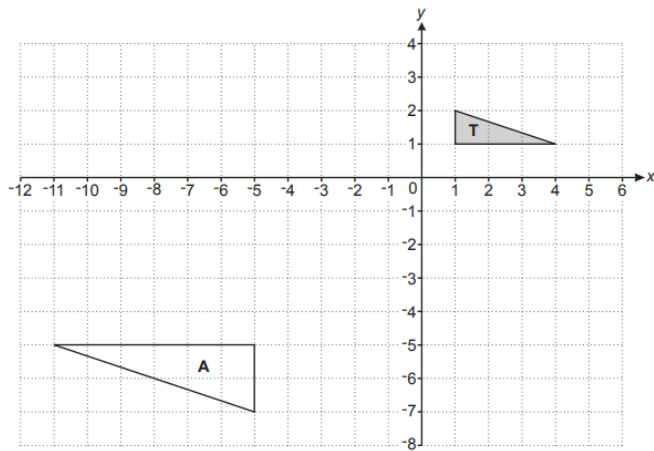
(c) The student now thinks the ratio of the probability of winning to the probability of losing has changed to 2 : 5.

Explain the effect this change will have on your answer to part (b).

..... [1]

Question 13

Triangle T and triangle A are drawn on the coordinate grid.



- (a) Describe fully the single transformation that maps triangle T onto triangle A.
- (b) Describe fully the single transformation that is equivalent to:
- a rotation of 90° clockwise about centre (0,0), followed by
 - a reflection in the y-axis.

Question 14

The histogram shows the heights of some plants out of a total of 80 plants. Complete the histogram to show the plants with heights between 0 cm and 20 cm.

