

Edexcel GCSE Mathematics Calculator 2021 Higher Paper 2 Revision Worksheet

Questions 10 – 20

10. Louise invests £ x in Better Investments for 3 years. Sadiq invests £ x in County Bank for 3 years.

Better Investments
Compound Interest
2.5% per annum

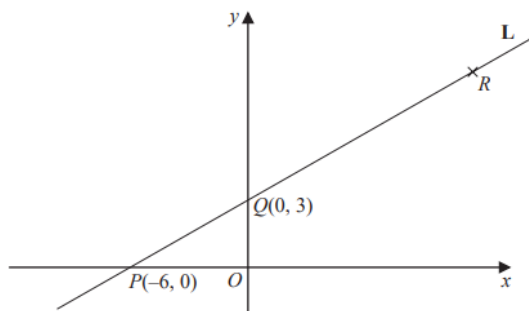
County Bank
Compound Interest
2% per annum for the first two years
3.5% per annum for each extra year

At the end of the 3 years, the value of Louise's investment is £344,605.

Work out the value of Sadiq's investment at the end of the 3 years.

£ _____

11. Here is a sketch of the line L.



(a) Find the coordinates of R. (_____ , _____)

(b) Find an equation of the line that is perpendicular to L and passes through Q.

12. Expand and simplify $(x - 2)(3x + 2)(2x + 3)$

13. In a school there are 16 teachers and 220 students. Of these students, 120 are girls and 100 are boys.

One teacher, one girl and one boy are going to be chosen to represent the school. Work out the number of different ways there are to choose one teacher, one girl and one boy.

14. A, B, C and D are four points on a circle. SBT is a tangent to the circle. Angle ABD = 20° , the size of angle BAD : the size of angle BCD = 3 : 1

Find the size of angle SBA. Give a reason for each stage of your working.

_____ $^\circ$

15. Here is triangle ABC.

- AB = 8 cm
- AC = 11 cm
- Angle BAC = 72°

(a) Find the length of BC. Give your answer correct to 3 significant figures.

_____ cm

(b) Find the area of triangle ABC. Give your answer correct to 3 significant figures.

_____ cm^2

16. (a) Use the iteration formula $x_{n+1} = \frac{\sqrt{10 - 2x_n}}{2}$ to find the values of x_1 , x_2 and x_3 . Start with $x_0 = 2$

$x_1 =$ _____

$x_2 =$ _____

$x_3 =$ _____

(b) The values of x_1 , x_2 and x_3 found in part (a) are estimates of the solution of an equation of the form $x^3 + ax + b = 0$ where a and b are integers.

Find the value of a and the value of b .

$a =$ _____

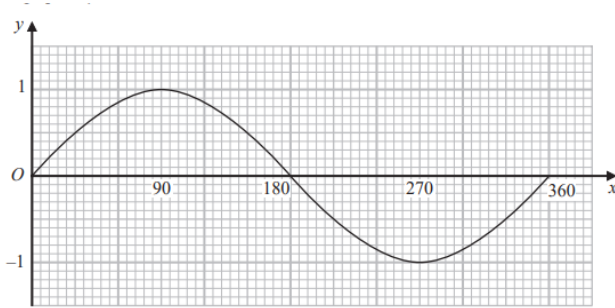
$b =$ _____

17. Some people took part in the first round of a competition. The histogram gives information about the scores of these people in the first round.

20% of the people got a score high enough for them to qualify for the second round.

Work out an estimate for the score needed to qualify for the second round. You must show all your working.

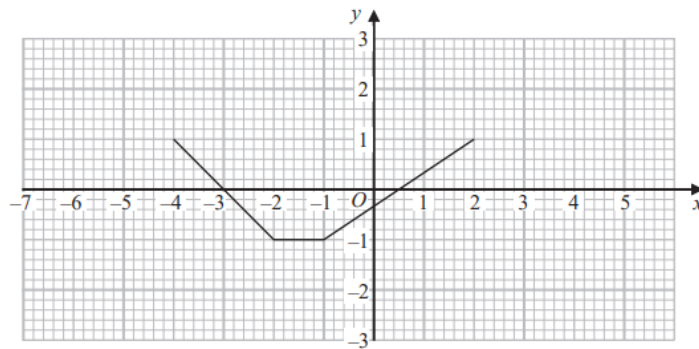
18. Here is a graph of $y = \sin x^\circ$ for $0 \leq x \leq 360$



(a) Using this graph, find estimates of all four solutions of $\sin x^\circ = 0.6$ for $0 \leq x \leq 720$

(b) The graph of $y = \sin x^\circ$ is reflected in the x-axis. Write down an equation of the reflected graph.

(c) Here is a graph of $y = f(x)$. On the grid, draw the graph of $y = f(x-2)$



19. A, B and C are three spheres.

The volume of sphere A is 125 cm^3 .

The volume of sphere B is 27 cm^3

The ratio of the radius of sphere B to the radius of sphere C is $1 : 2$.

Work out the ratio of the surface area of sphere A to the surface area of sphere C.

20. In a village, if it rains on one day, the probability that it will rain on the next day is 0.8

If it does not rain on one day, the probability that it will rain on the next day is 0.6

A weather forecaster says,

"There is a 70% chance that it will rain in the village on Monday."

Work out an estimate for the probability that it will rain in the village on Wednesday.

You must show all your working.