

Name:



2017 Non Common Entrance
Third Form Entry

Mathematics

Time Allowed: 60 minutes

Instructions

- **Calculators are NOT permitted**
- Write ALL your working and answers on this paper. Show enough working on each question to make it clear how you reached your answer.
- Do not spend too long working on any particular question. Do not worry if you do not manage to complete every question.
- You may work in pen or pencil.

Question 1

- (a) A car is 3.28 metres long. A trailer is 1.86 metres long.
What is the combined length?

Answer

- (b) A pallet of bricks contains 648 bricks.
Calculate the number of bricks in 37 pallets.

Answer

- (c) One kilogram of carrots cost £1.79.
What does 0.37 kilograms of carrots cost (to the nearest pence)?

Answer

- (d) There are 0.907 metres in 1 yard. How many metres are there in 0.026 yards?

Answer

- (e) The total length of seven cars is 22.19 metres. What is the average length of these cars?

Answer

- (f) Work out $11 + 39 \div 13 - 5 \times 3$

Answer

- (g) 67% of all pencils manufactured are never used up.
In a bulk pack of 3490 pencils, how many will not be used up?

Answer

Question 2

- (a) Calculate two thirds of five and a quarter.

Answer

- (b) Add five eighths to three quarters.

Answer

- (c) Four cakes are divided equally amongst seven people. One fifth of a cake is left over.
What fraction of a cake does each person get?

Answer

- (d) Write down a fraction between nine fifths and two.

Answer

Question 3

If $a = 11$, $b = -3$ and $c = -6$, find the value of the following expressions

(a) abc

Answer

(b) bc^2

Answer

(c) $3a - 2b - 4c$

Answer

Question 4

How many different 3-digit whole numbers can be formed using the digits 4, 7 and 9, assuming that no digit can be repeated in a number?

Answer

Question 5

For the questions below, form an equation from the given information and solve it to find the answer.

- (a) I think of a number, add five and then divide by two. My answer is -17 .
What number was I thinking of?

Answer

- (b) Twice a number added to half of the same number gives 90.
What was the number?

Answer

- (c) When two is added to twice the square of a number, the result is 100.
What are the two possible starting numbers?

Answer

- (d) When three tenths of a number is subtracted from ninety-five hundredths of the same number, the result is 1.95.
What was the original number?

Answer

Question 6

Calculate 7% of seven plus 9% of nine.

Answer

Question 7

In a triangle, one of the angles is 45 degrees. The other two angles in the triangle are in the ratio 4 : 5.
How big is the largest angle in the triangle?

Answer

Question 8

When three consecutive odd numbers are multiplied together, the result is 9177.
What is the sum of the numbers?

Answer

Question 9

A bicycle at Store P costs \$200. The regular price of the same bicycle at Store Q is 15% more than it is at Store P. The bicycle is on sale at Store Q for 10% off of the regular price.
What is the sale price of the bicycle at Store Q?

Answer

Question 10

A set of five different positive integers has a mean (average) of 20 and a median of 18.
What is the greatest possible integer in the set?

Answer

Question 11

A palindrome is a positive integer that is the same when read forwards or backwards.
The numbers 101 and 4554 are examples of palindromes.
Calculate the ratio of the number of 4-digit palindromes to the number of 5-digit palindromes.

Answer
