



OUNDLE

School

EXAMINATION PAPER

Non Common Entrance 2025

Mathematics

Time allowed: 1 hour

Name: _____

Instructions

- Calculators are **NOT** allowed.
- 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 one question. Do not worry if you do not manage to complete every question.
- You may work in pen or pencil.

Question 1

- (a) John purchases 2.3kg of lemons at £2.83 per kg. How much does he pay for the lemons? Give your answer to the nearest penny.

Answer

- (b) Jane and her three housemates receive a water bill for £54.73 and an electricity bill of £118.43. If they split the cost equally, how much should they each contribute?

Answer

- (c) Richard has saved £560.19. He buys an archery bow costing £434.95. Arrows for this bow cost £7.50 each. How many arrows can Richard afford to buy?

Answer

Question 2 Work out the following, obeying the correct order of operations.

(a) $20 + 25 - 16 + 1$

Answer

(b) $50 - 72 \div (6 - 4 \times 3)$

Answer

(c) $6 \times 3^2 - (4 - 7)$

Answer

(d) $((4 + 3 \times 2)^2 - 2) \div 7$

Answer

Question 3

(a) Write 90 as a product of its prime factors

Answer

(b) List all the factors of 90, in ascending order

Answer

Question 4 Calculate the following. Your answers should be fully simplified and written as a mixed number where appropriate.

(a) $\frac{3}{4} + \frac{5}{9}$

Answer

(b) $\frac{9}{16} - \frac{5}{12}$

Answer

(c) $\frac{8}{21} \times \frac{15}{28}$

Answer

(d) $\frac{7}{18} \div \frac{14}{33}$

Answer

Question 5

- (a) Two buses leave the bus station at the same time. One bus returns to the station every 12 minutes, while the other bus returns every 18 minutes. How many minutes will pass before both buses return to the station at the same time again?

Answer

- (b) Gordon is organising an activity day. There are 40 pupils from Oundle, 64 pupils from Prince William, and 72 from Kettering Buccleuch. Gordon wants to split the pupils into teams so that every pupil is in a team, and that every team has an identical ratio of pupils from each school. What is the greatest number of teams that Gordon can make?

Answer

Question 6

If $a = 6$, $b = 4$ and $c = -8$, find the value of the following expressions

(a) $c - ab$

Answer

(b) $\frac{ab^2}{c}$

Answer

(c) $\frac{3b}{2(a+c)}$

Answer

Question 7 Fully simplify the following algebraic expressions

(a) $9a + 6b - a - 7b + 5$

Answer

(b) $3x - x - 5 + 2x^2 + 14$

Answer

(c) $7pq - 4p - 3q + 6p$

Answer

(d) $(2x)^3 \times 3xy$

Answer

Question 8 Solve the following equations, leaving your answers as simplified improper fractions where necessary.

(a) $7x - 5 = 48$

Answer

(b) $\frac{5x}{6} - 2 = 7$

Answer

(c) $5(4x - 3) = -60$

Answer

(d) $34 - 9x = 5x - 4$

Answer

(e) $\frac{12x-7}{5} = 6$

Answer

(f) $2x + \frac{1}{9} = 4 - \frac{2}{5}x$

Answer

Question 9

For the following questions you must form and solve an equation.

- (a) I think of a number, add eight, then multiply the result by 7; I now have 35.
What was the number I thought of?

Equation

Solution

- (b) Billy, Bertie and Benny have 200 building blocks. Bertie builds a tower using twice as many blocks as Billy. Benny builds a tower using 10 fewer blocks than Bertie. If all the blocks were used making the three towers, how many blocks did Benny use to build his tower?

Equation

Solution

Question 10

A bag contains a mixture of red and yellow beads. There are 60 beads in total, and there are 10 more yellow beads than red beads.

- a) What is the ratio of red beads to yellow beads? Give your answer in its simplest form.

Answer

An equal number of red and yellow beads are removed from the bag. The ratio of red to yellow beads is now 3:5.

- b) How many beads were removed?

Answer

Question 11

Romero bought 240 undecorated water bottles for £150. After applying decorations at a cost of 10p per bottle, he sold:

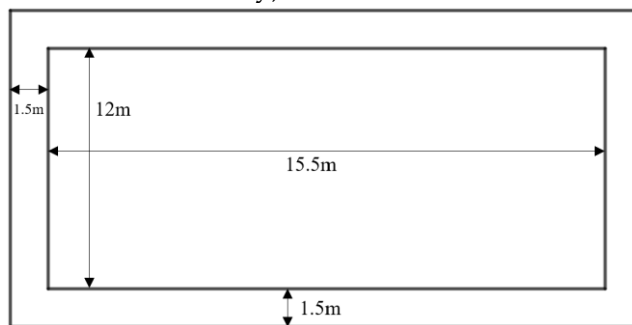
- One third of the bottles for £4 each
- 35% of the bottles at the price of two for £7
- The remaining bottles at £2 each

Calculate the total profit that Romero made.

Answer

Question 12 In this question you may approximate the value of π as 3.1.

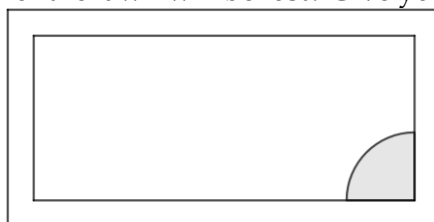
- (a) A rectangular lawn measuring $12m$ by $15.5m$ is surrounded by a $1.5m$ wide path, as shown in the diagram below (not drawn accurately).



Calculate the total area of the path.

Answer

- (b) The garden owner wants to place a quarter-circle patio in the corner of the lawn. The quarter-circle is centred at the corner of the lawn, as shown below. If the quarter-circle patio has a radius of $4.8m$, what fraction of the lawn will be lost? Give your answer in its simplest form.



Answer