

Name:



OUNDLE

School

2016 Junior Entrance Examination
Second Form Entry

Mathematics

Time Allowed: 60 minutes

Instructions

- Attempt all questions.
- All working and answers must be shown on this paper. Marks will be given for demonstrating your method.
- Calculators are *not* permitted.

1. Work out

(a) $2717 + 1987$

Answer

(b) 63×41

Answer

(c) $8008 \div 13$

Answer

(d) 21% of 426

Answer

(e) $\frac{4}{7} - \frac{3}{5}$

Answer

(f) $2\frac{1}{3} \times 3\frac{3}{7}$

Answer

2. Calculate each of the following

(a) -17×-0.6

Answer

(b) $(9 - 8 \times 0.25) + 1.5$

Answer

(c) $1 - (1 - (1 - 2))$

Answer

3. Continue the following patterns, filling in the next two terms for each.

(a) -4, -7, -10, -13,,

(b) 8.1, 6, 3.9, 1.8,,

(c) -15, -3, 9, 21, 33,,

(d) 1, 2, 5, 14, 41, 122,,

(e) $ax, 2ax^2, 3ax^3, 4ax^4, \dots, \dots$

(f) $x, \frac{x^2}{3}, \frac{x^3}{9}, \frac{x^4}{27}, \frac{x^5}{81}, \dots, \dots$

4. If $x = 7$, $y = -5$ and $z = -6$, find the value of

(a) $x + y - z$

Answer

(b) xy

Answer

(c) $-3y^2$

Answer

(d) $2yz - x^3$

Answer

5. Calculate the average (mean) of the numbers below:

94 30 78 33 97 10

Answer

6. (a) What is the largest whole number that is a factor of (i.e. will divide into) 357 and 255?

Answer

(b) What is the smallest whole number that 357 and 255 will divide into?

Answer

7. (a) What is 387 minutes in hours and minutes?

Answer

(b) Change 9.6 hours into minutes.

Answer

8. (a) I think of a number, then subtract fifteen. The result is thirty-seven.
What was the original number?

Answer

- (b) I think of a number, multiply it by six, then subtract nine. The result is thirty-three.
What was the original number?

Answer

- (c) I think of a number, double it, then add fifteen. The result is three.
What was the original number?

Answer

9. Explain *carefully* why it is not possible to construct a triangle with side lengths of 2,3 and 6cm.

10. Write down the missing number in each of the following

(a) $2\ 100 \times ? = 84\ 000$

Answer:

(b) $2.1 \times ? = 84$

Answer:

(c) $8.4 \div ? = 21$

Answer:

11. (a) Calculate $231 \times 43 - 31 \times 43$ using an efficient method. Show working.

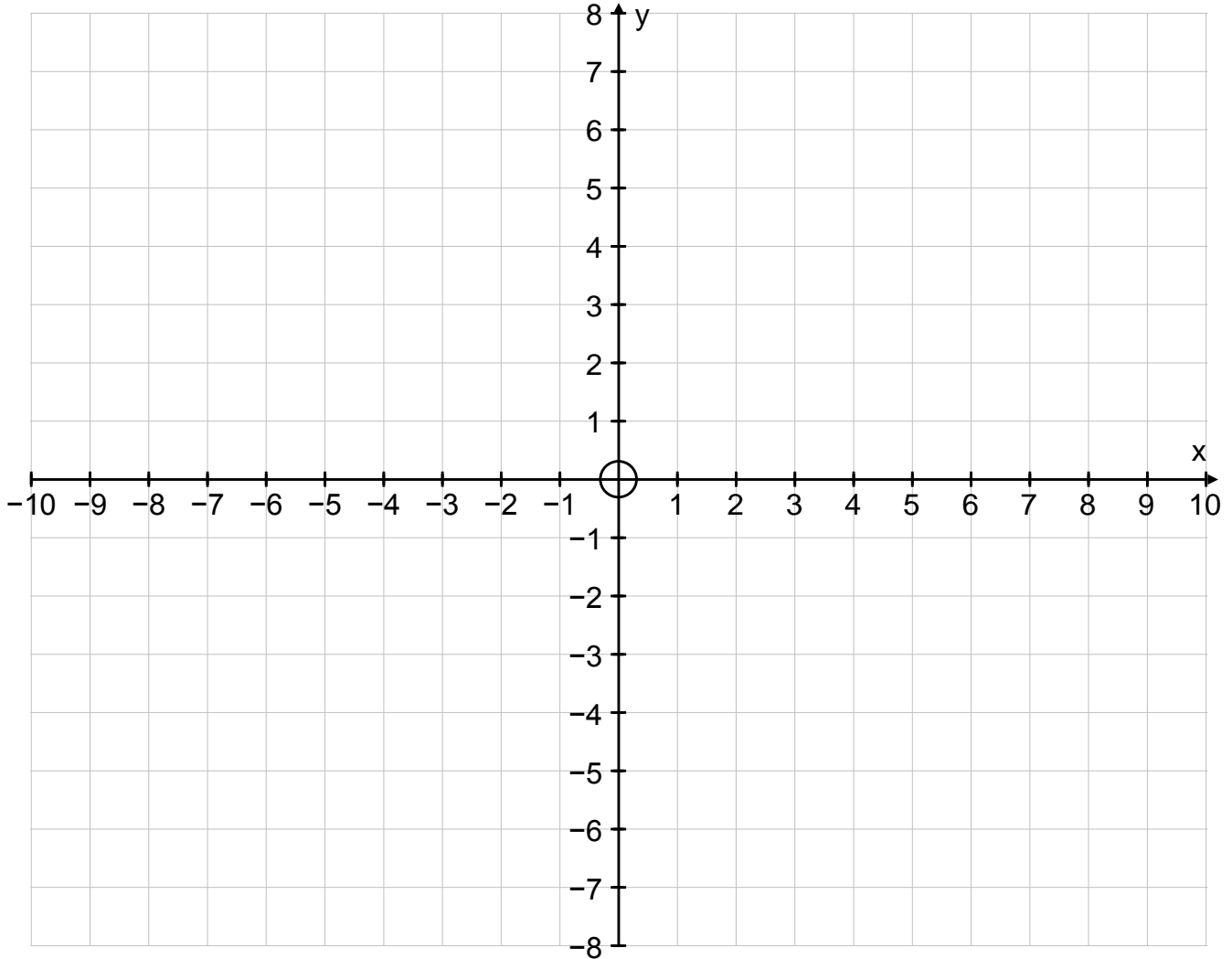
Answer:

(b) Calculate $26 \times 345 - 101 \times 345 + 75 \times 345$ using an efficient method. Show working.

Answer:

12. (a) Mark the following points on the grid below and join them up in order using straight lines.

- A is at (3,4)
- B is at (0, 5)
- C is at (-2, 0)



(b) A rectangle has coordinates (1,-3), (1,-7) and (7, -3).
What are the coordinates of the final corner?

Answer:

(c) A *right angled* triangle has two corners at coordinates (9, 7) and (5, 2).
Give the coordinates of two possible positions for the 3rd corner.

Answer:

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