GCSE
Mathematics: Calculator
Paper 4

Specification EDEXCEL A

Name	

Time allowed
  - 30 minutes.

For this paper you must have
  - A ballpoint pen with black ink.
  - A ruler with millimetre measurements.
  - A pencil.
  - A scientific calculator.

Instructions
  - Do all rough work in this question booklet.
  - Answer **all** the questions.
  - You **must** show your working for all questions.

You should give non-exact answers correct to 3 significant figures unless another degree of accuracy is specified in the question or is clearly appropriate.

The maximum mark for this paper is 40.

Question	Mark
1	
2	
3	
4	
5	
6	
7	
8	
9	
TOTAL	

Grade Boundaries

A* **31**
A **25**
B **20**
C **15**
D **7**

1. A beaker can hold 240 cm³.
40 cm³ is poured into the beaker.

(a) What fraction of the beaker is full?

....

(1 mark)

(b) More water is added to the beaker until it is 80% full.
Work out how much more water was added.

.... cm³

(2 marks)

2. Simplify the following.

(a) $4x^6 \times 5x^2$

Answer ....

(2 marks)

(b) $4x(x^2 + 3) - 11x$

Answer ....

(2 marks)

(c) $\dfrac{x^5}{x^2}$

Answer ....

(1 mark)

3. (a) Here is a triangle.
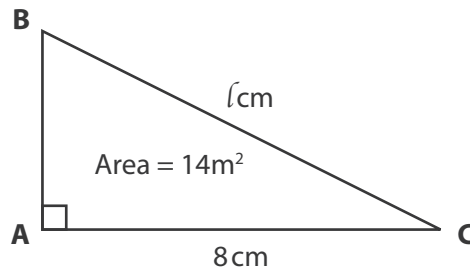
Use the information in the diagram to calculate the value of l.
Give your answer to **2 significant figures**.

$l =$ .... cm

(4 marks)

(b) Angle **ABC** is 66O.
Write down the size of angle **ACB**, giving your reasoning.

Angle **ACB** .... O

Reasoning ....

....

(2 marks)

Turn over for Question 4 ▶

4 . (a) Express $3x^2 + 14x + 8$ in the form $(ax + b)(x + 4)$ where the values of the constants a and b are to be found.
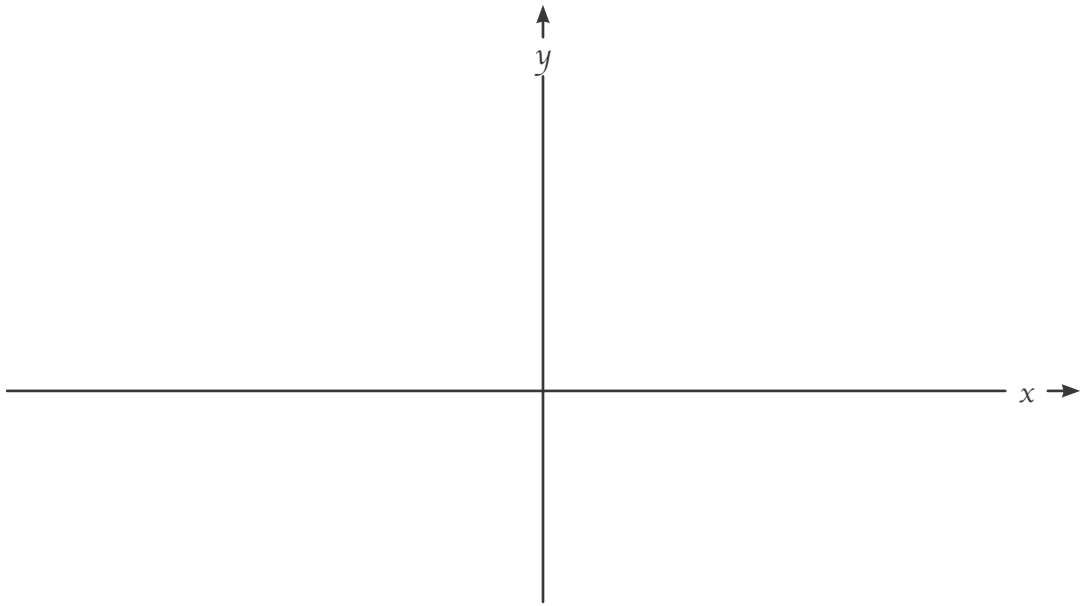
Answer ....

(3 marks)

(b) Hence simplify $\dfrac{3x^2 + 14x + 8}{x^2 - 16}$

Answer ....

(3 marks)

5. (a)   A curve has equation $y = x^2 - 1$.
Sketch this curve on the axes below.

(b)   The line $y = -x$ intersects the curve $y = x^2 - 1$ twice.

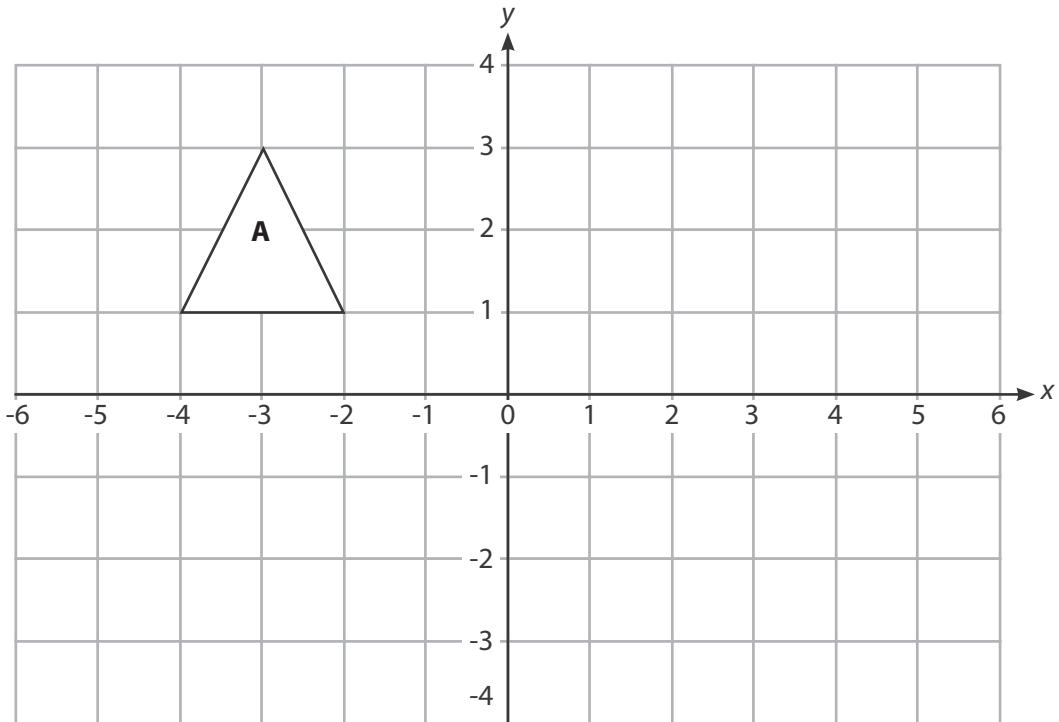Find the coordinates of the points where the line $y = -x$ and the curve $y = x^2 - 1$ intersect.

(............................. , ...)

(............................. , ...)

6. (a) Enlarge triangle **A** with a scale factor −1 and centre (0, 0).

(2 marks)

(b) Describe fully another single transformation with the same effect on triangle **A** as the enlargement in part **(a)**.

....

....

....

....

(2 marks)

7. A car increases its speed by 40% to 72 kmh⁻¹.
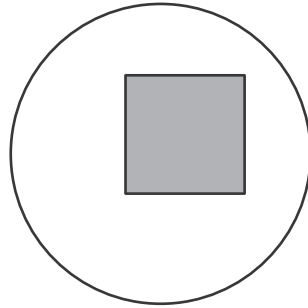Work out how fast the car was travelling before it increased it's speed.

.... kmh⁻¹

(2 marks)

8. Convert the recurring decimal $0.1\dot{5}$ to a fraction.

Answer ....

(3 marks)

Turn over for Question 9 ▶

9. The diagram shows a square inside of a circle.

Not drawn accurately

The ratio of the circles diameter to the length of the square is **12 : 5**.

Work out the percentage of the circle which is covered by the square.

.... %

(5 marks)

END OF QUESTIONS