

Dr Oliver Mathematics
Mathematics: National Qualifications N5
2026 Paper 1: Non-Calculator
1 hour

The total number of marks available is 40.

To earn full marks you must show your working in your answers.

1. Expand and simplify (3)
- $$(y + 4)(y^2 - 3y + 2).$$

2. An electric car shows that it has enough charge remaining in its battery to travel 180 miles. (3)

The battery has 60% of its charge remaining.

Calculate the number of miles the car can travel when the battery is fully charged.

3. A restaurant recorded the waiting times to be seated from a sample of its customers.

The waiting times, in minutes, of ten customers were:

2 20 5 14 2 4 8 18 6 15

- (a) Calculate the median and interquartile range of the waiting times. (2)

A café also recorded the waiting times to be seated from a sample of its customers.

The median waiting time at the café was 5 minutes and the interquartile range was 12 minutes.

- (b) Make two valid comments comparing the waiting times at the restaurant and at the café. (3)
4. Solve, algebraically, the inequation (3)

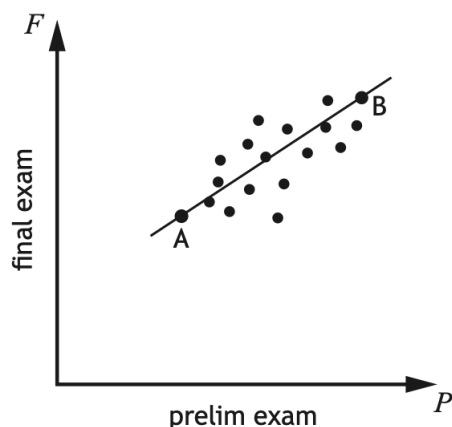
$$x + 8 < 3(x - 2) + 20.$$

5. Sam walked $2\frac{3}{4}$ miles to a park and then walked a further $1\frac{2}{3}$ miles to a shop. (2)

Calculate the total distance Sam walked.

6. A teacher records the marks scored by the pupils in her class for the prelim exam and the final exam.

The scattergraph shows the relationship between the marks scored in the prelim exam, P , and the final exam, F .



A line of best fit is drawn.

- Point A represents a pupil who scored 30 in the prelim exam and 54 in the final exam.
 - Point B represents a pupil who scored 90 in the prelim exam and 94 in the final exam.
- (a) Find the equation of the line of best fit in terms of F and P .
Give the equation in its simplest form. (3)

A pupil scored 33 marks in the prelim exam.

- (b) Use your equation from part (a) to estimate their mark in the final exam. (1)
7. Find $|\mathbf{d}|$, the magnitude of vector (3)

$$\mathbf{d} = \begin{pmatrix} 4 \\ -5 \\ 7 \end{pmatrix}.$$

Express your answer as a surd in its simplest form.

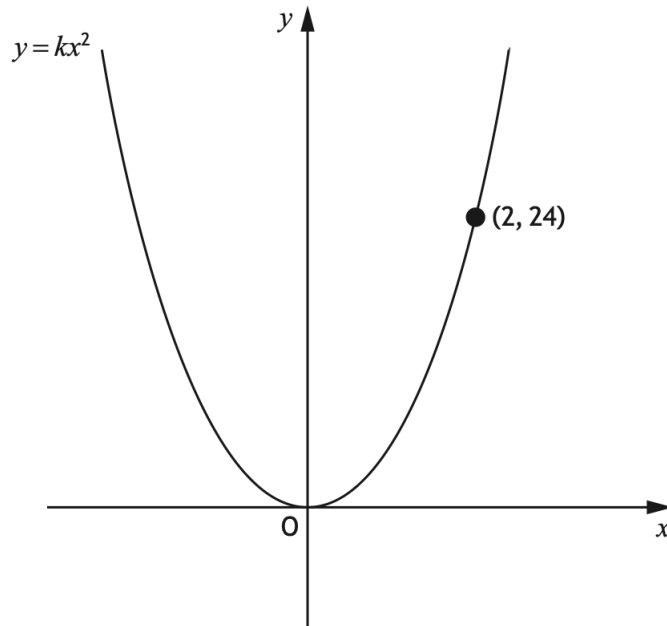
8. Change the subject of the following formula to T : (2)

$$P = \sqrt{T - 3L}.$$

9. The diagram shows part of the graph of

(2)

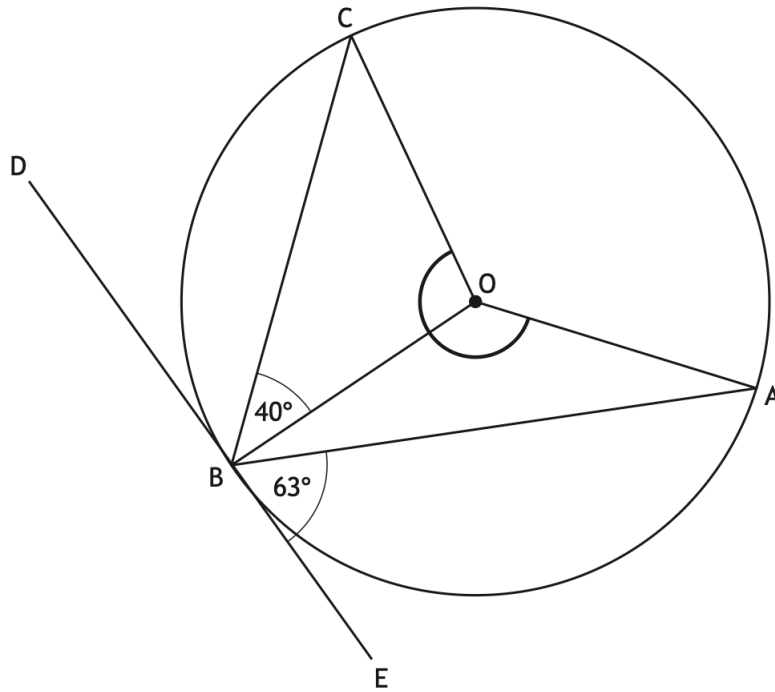
$$y = kx^2.$$



Find the value of k .

10. The diagram shows a circle with centre O .

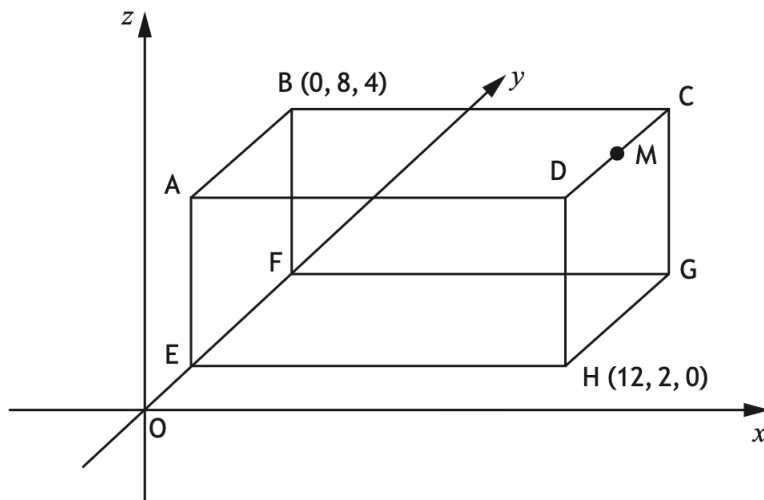
(3)



- DE is a tangent to the circle at the point B .
- Angle $OBC = 40^\circ$.
- Angle $ABE = 63^\circ$.

Calculate the size of the **reflex** angle AOC .

11. The diagram shows a cuboid, $ABCDEFGH$, relative to the coordinate axes.



- B has coordinates $(0, 8, 4)$.

- H has coordinates $(12, 2, 0)$.
- EH is parallel to the x -axis.

(a) State the coordinates of G . (1)

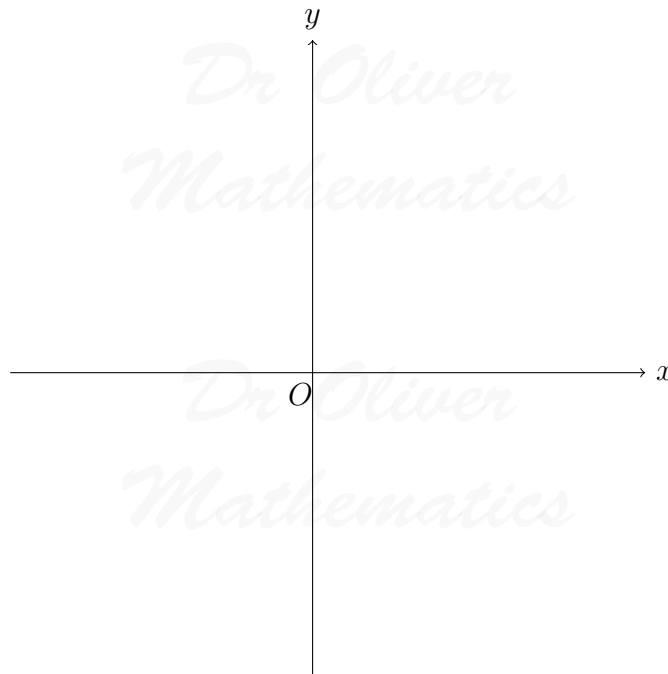
M is the midpoint of CD .

(b) State the coordinates of M . (1)

12. On the axes below, sketch the graph of (3)

$$y = (x + 2)^2 + 3.$$

On your sketch, show clearly the coordinates of the turning point and the point of intersection with the y -axis.



13. Given that (2)

$$f(x) = 5 \cos 2x^\circ,$$

evaluate

$$f(90).$$

14. Solve the equation **by factorising**: (3)

$$10x^2 + 11x - 6 = 0.$$