

- 1 Write down the number which is 3.6 less than -4.7 .

For
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Use

Answer [1]

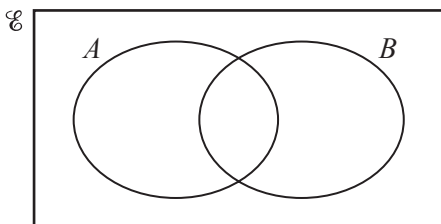
- 2 A plane took 1 hour and 10 minutes to fly from Riyadh to Jeddah.
The plane arrived in Jeddah at 23 05.
At what time did the plane depart from Riyadh?

Answer [1]

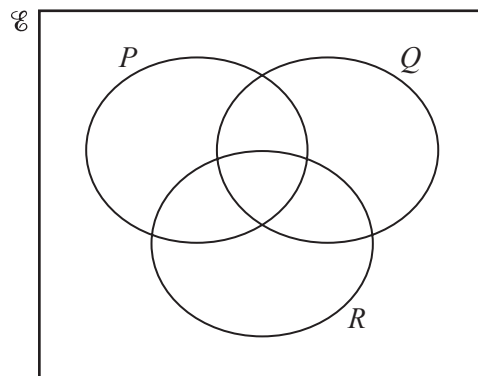
- 3 Calculate $\sqrt[3]{2.35^2 - 1.09^2}$.
Give your answer correct to 4 decimal places.

Answer [2]

- 4 Shade the required region on each Venn diagram.



$A \cap B'$



$(P \cup Q) \cap R'$

[2]

5 Show that $3\frac{3}{4} + 1\frac{1}{3} = 5\frac{1}{12}$.

Write down all the steps in your working.

Answer

[2]

6 Write the following in order of size, **smallest** first.

$$\frac{20}{41} \quad \frac{80}{161} \quad 0.492 \quad 4.93\%$$

Answer < < < [2]

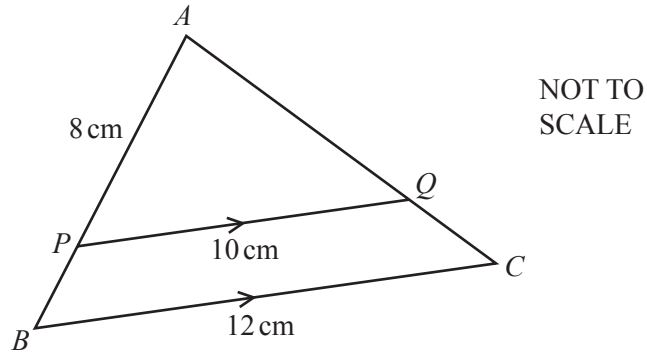
7 In France, the cost of one kilogram of apricots is €3.38 .
In the UK, the cost of one kilogram of apricots is £4.39 .
£1 = €1.04 .
Calculate the difference between these prices.
Give your answer in pounds (£).

Answer £ [2]

8 A large rectangular card measures 80 centimetres by 90 centimetres.
Maria uses **all** this card to make small rectangular cards measuring 40 **millimetres** by
15 **millimetres**.
Calculate the number of small cards.

Answer [2]

9



APB and AQC are straight lines. PQ is parallel to BC .
 $AP = 8$ cm, $PQ = 10$ cm and $BC = 12$ cm.
 Calculate the length of AB .

Answer $AB =$ cm [2]

- 10** Nikhil invests \$200 for 2 years at 4% per year **compound** interest.
 Calculate the **exact** amount Nikhil has after 2 years.

Answer \$ [2]

- 11** In a group of 24 students, 21 like football and 15 like swimming.
 One student does **not** like football and does **not** like swimming.
 Find the number of students who like **both** football and swimming.

Answer [2]

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- 12** The side of a square is 6.3 cm, correct to the nearest millimetre.
The lower bound of the perimeter of the square is u cm and the upper bound of the perimeter is v cm.
Calculate the value of

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(a) u ,

Answer(a) $u =$ [1]

(b) $v - u$.

Answer(b) $v - u =$ [1]

13 $a \times 10^7 + b \times 10^6 = c \times 10^6$

Find c in terms of a and b .
Give your answer in its simplest form.

Answer $c =$ [2]

- 14** Priyantha completes a 10 km run in 55 minutes 20 seconds.
Calculate Priyantha's average speed in km/h.

Answer km/h [3]

- 15 Find the equation of the straight line which passes through the points (0, 8) and (3, 2).

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Answer [3]

16 $\frac{g}{2} = \sqrt{\frac{h}{i}}$

Find i in terms of g and h .

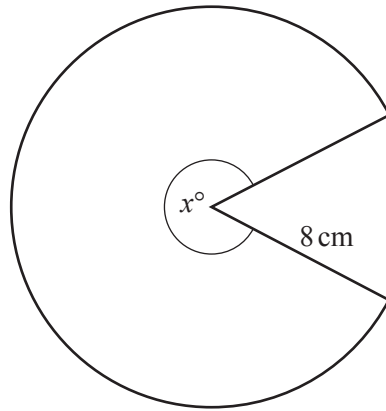
Answer $i =$ [3]

- 17 Solve the simultaneous equations.

$$\begin{aligned} 5x - y &= -10 \\ x + 2y &= 9 \end{aligned}$$

Answer $x =$
 $y =$ [3]

18

NOT TO
SCALE*For
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Use*

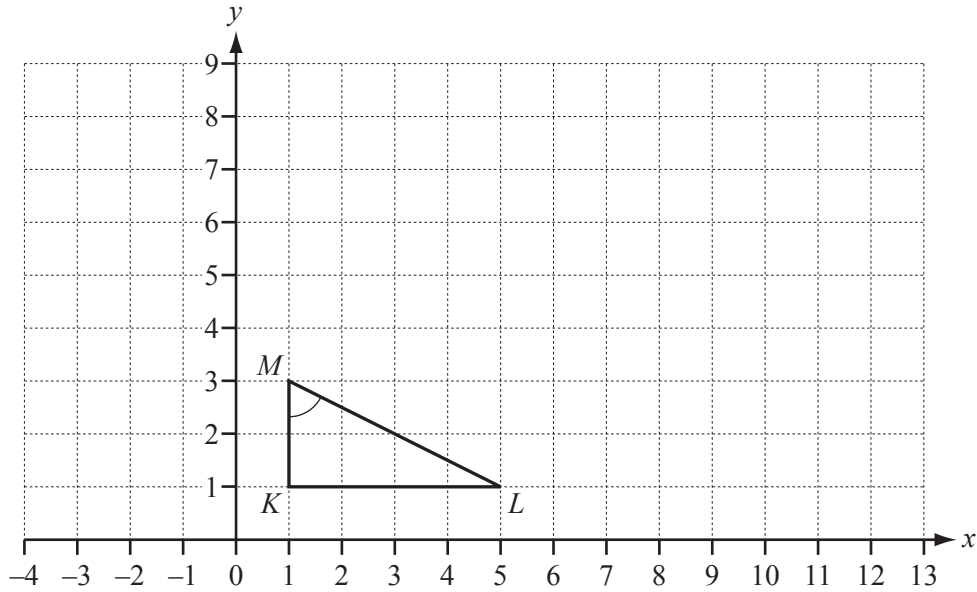
The diagram shows a sector of a circle of radius 8 cm.
The angle of the sector is x° .
The perimeter of the sector is $(16 + 14\pi)$ cm.

Find the value of x .

Answer $x =$ [3]

- 19** A model of a car is made to a scale of 1 : 40.
The volume of the model is 45 cm^3 .
Calculate the volume of the car.
Give your answer in m^3 .

Answer m^3 [3]

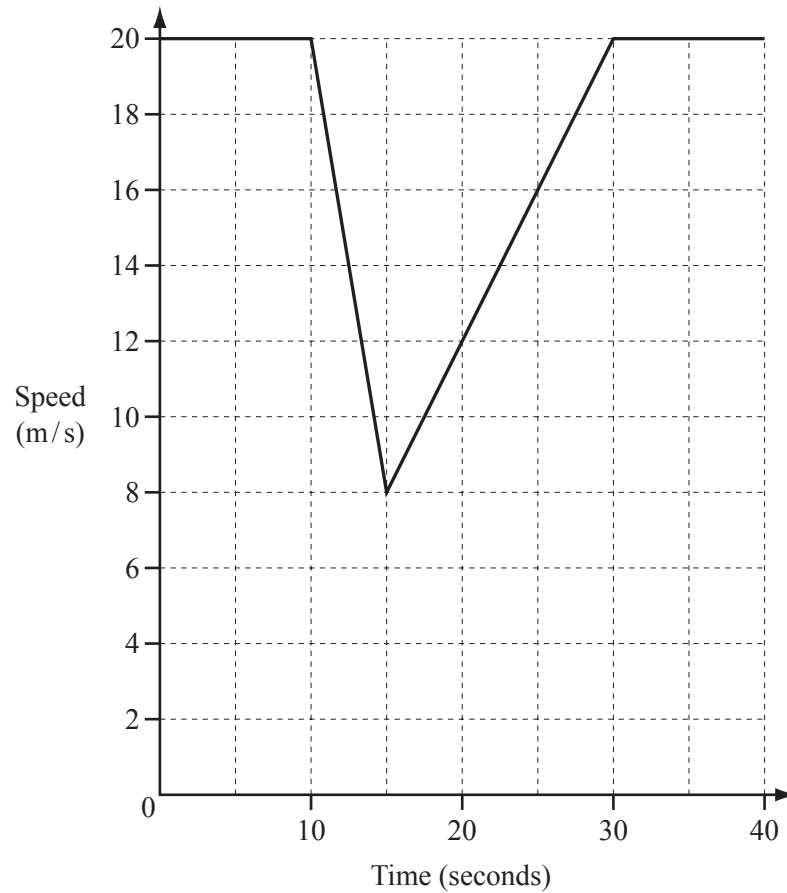


The triangle KLM is shown on the grid.

- (a) Calculate angle KML .

Answer(a) Angle KML = [2]

- (b) On the grid, draw the shear of triangle KLM , with a shear factor of 3 and the x -axis invariant. [2]
-



The graph shows 40 seconds of a car journey.

The car travelled at a constant speed of 20 m/s, decelerated to 8 m/s then accelerated back to 20 m/s.

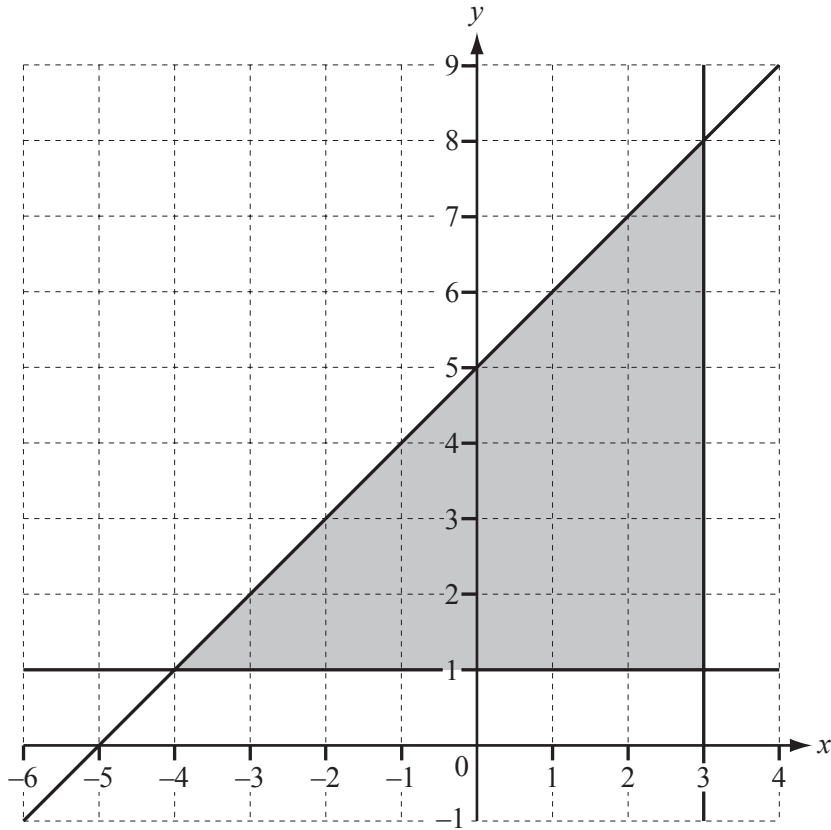
Calculate

(a) the deceleration of the car,

Answer(a) m/s² [1]

(b) the total distance travelled by the car during the 40 seconds.

Answer(b) m [3]



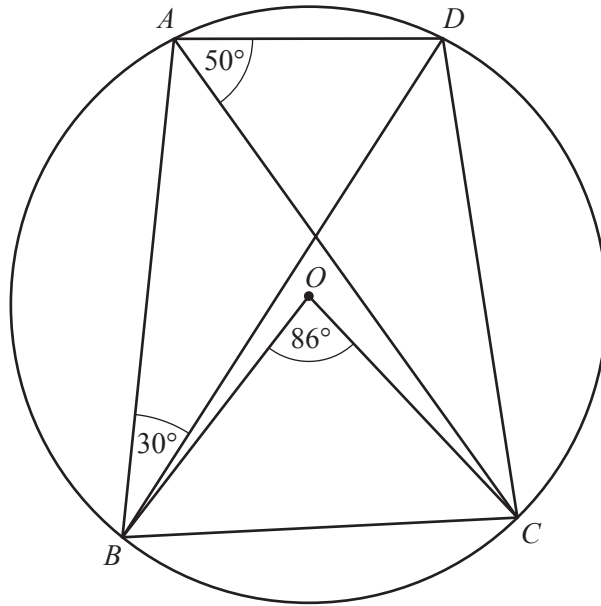
Find the three inequalities which define the shaded triangle in the diagram.

Answer

.....

.....

[5]



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The points A, B, C and D lie on the circumference of the circle, centre O .

Angle $ABD = 30^\circ$, angle $CAD = 50^\circ$ and angle $BOC = 86^\circ$.

(a) Give the reason why angle $DBC = 50^\circ$.

Answer(a) [1]

(b) Find

(i) angle ADC ,

Answer(b)(i) Angle $ADC =$ [1]

(ii) angle BDC ,

Answer(b)(ii) Angle $BDC =$ [1]

(iii) angle OBD .

Answer(b)(iii) Angle $OBD =$ [2]

Questions 24 and 25 are printed on the next page.

24 (a) Write $\frac{1}{y} - \frac{2}{x}$ as a single fraction in its lowest terms.

Answer(a) [2]

(b) Write $\frac{x^2 + x}{3x + 3}$ in its lowest terms.

Answer(b) [3]

25 $f: x \rightarrow 2x - 7$ $g: x \rightarrow \frac{1}{x}$

Find

(a) $fg\left(\frac{1}{2}\right)$,

Answer(a) [2]

(b) $gf(x)$,

Answer(b) $gf(x) =$ [1]

(c) $f^{-1}(x)$.

Answer(c) $f^{-1}(x) =$ [2]

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