

Higher Tier

25 Starter Prompts

Students should be challenged to produce their own questions and answers using the information given

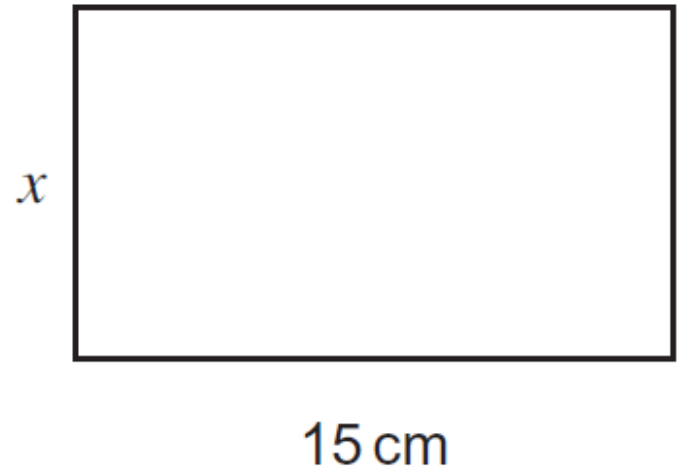
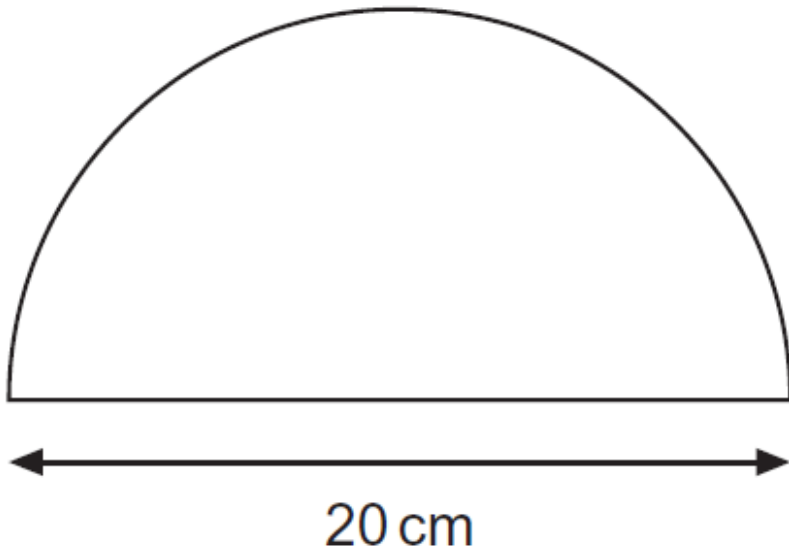
Prompt 1

Harry is going to buy a new car.

Here is some information about the running costs of the car.

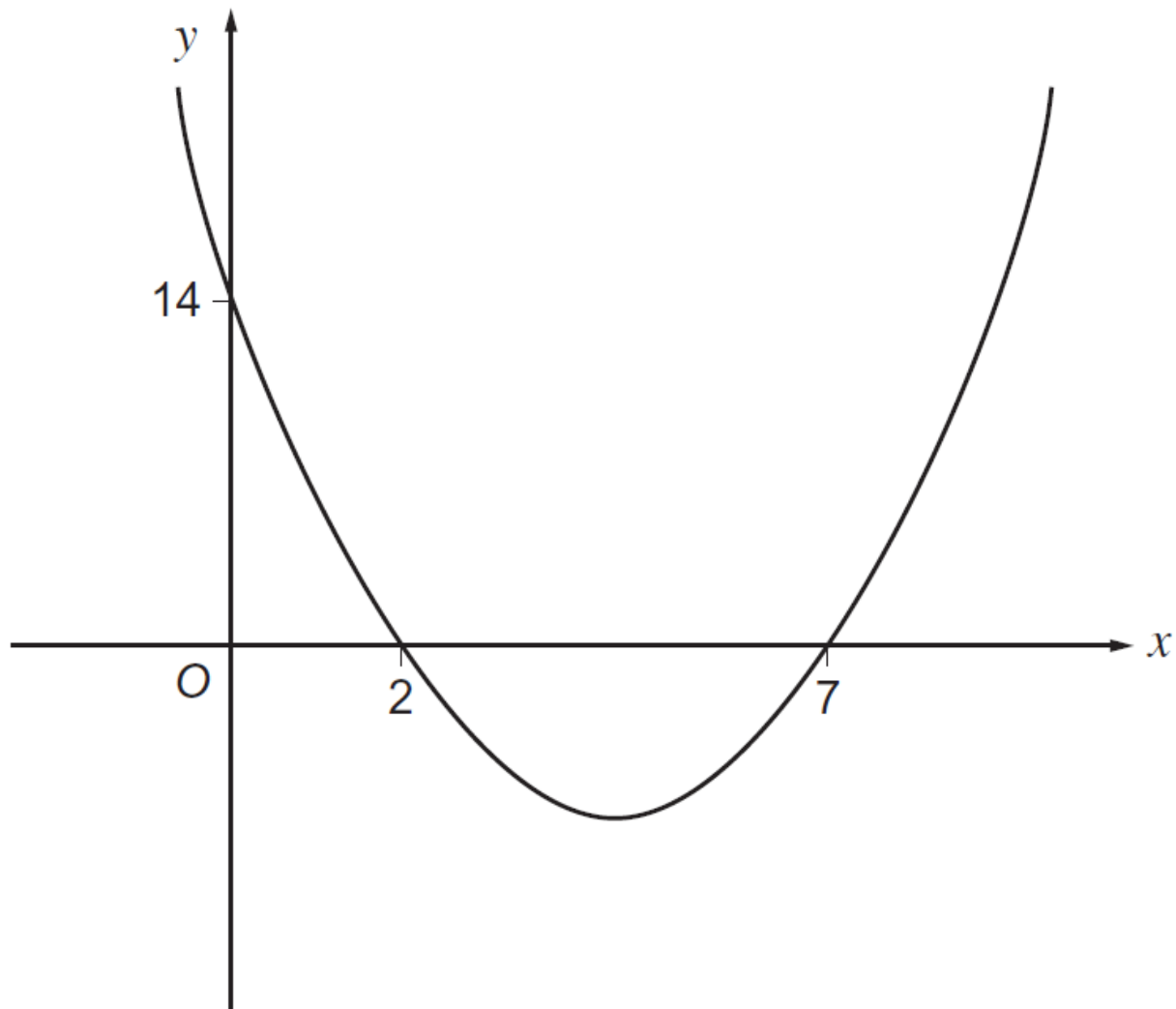
Average amount of fuel used per 100 km	5 litres
Average cost of fuel per litre	£1.20
Road Tax and Insurance, per year	£450
Total servicing costs for three years	£500

Prompt 2



Prompt 3

Not drawn accurately

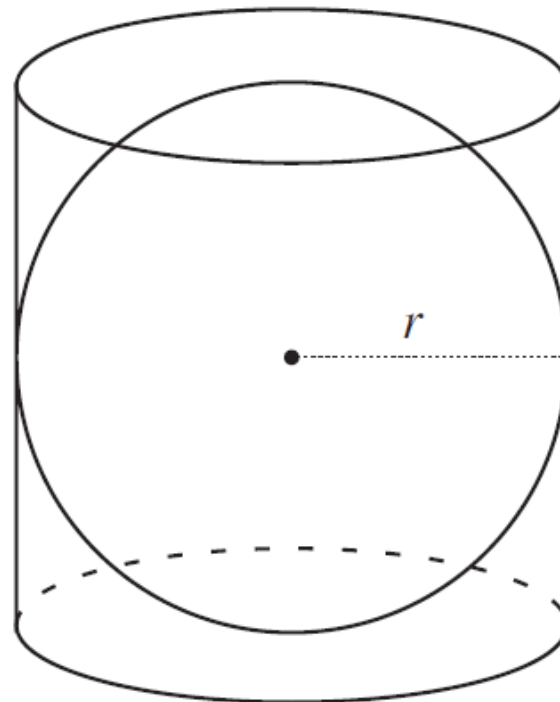


Prompt 4

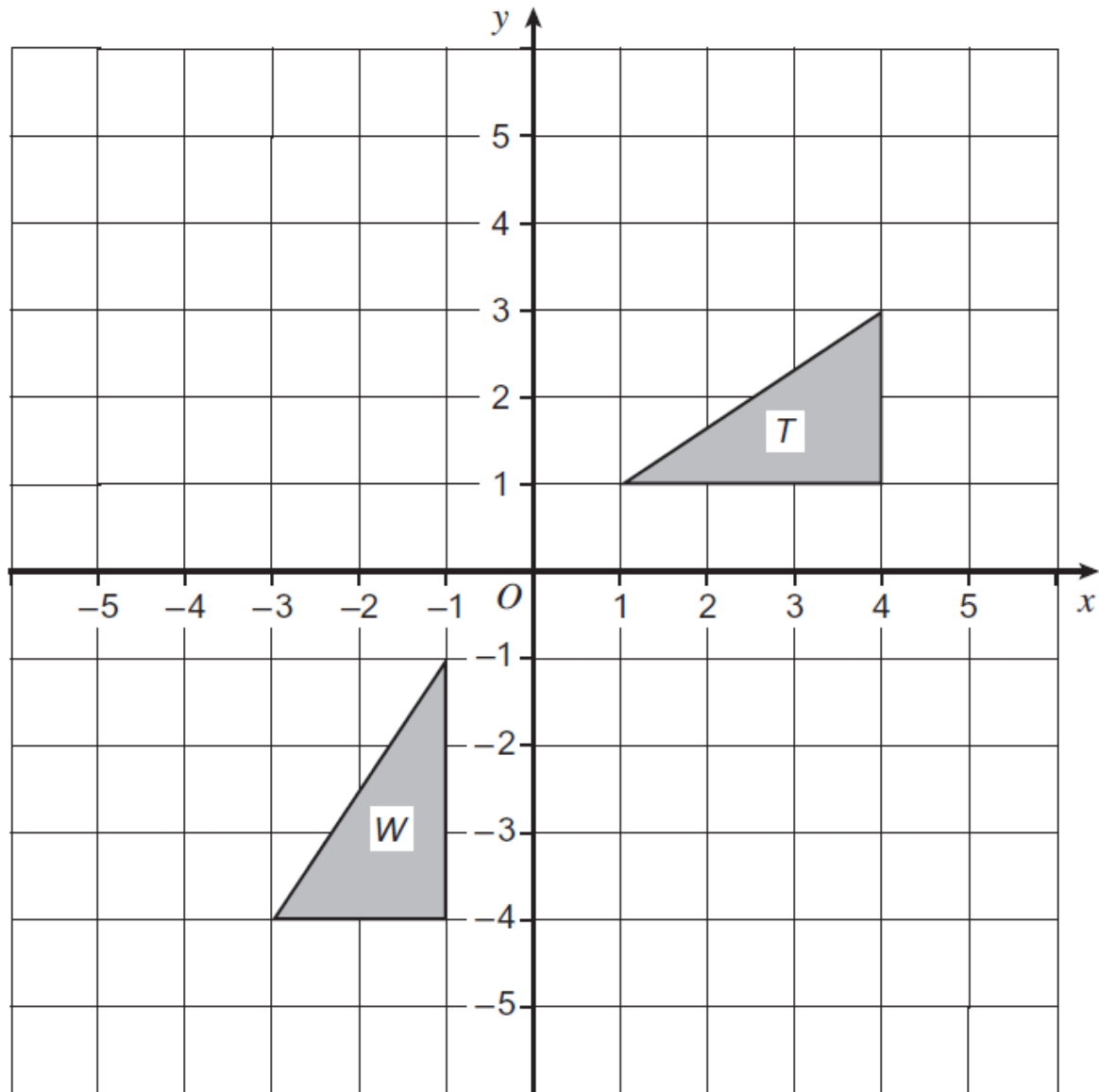
Time (minutes)	Number of vehicles
$0 < t \leq 30$	15
$30 < t \leq 60$	
$60 < t \leq 150$	180
$150 < t \leq 210$	90
$210 < t \leq 240$	75

Prompt 5

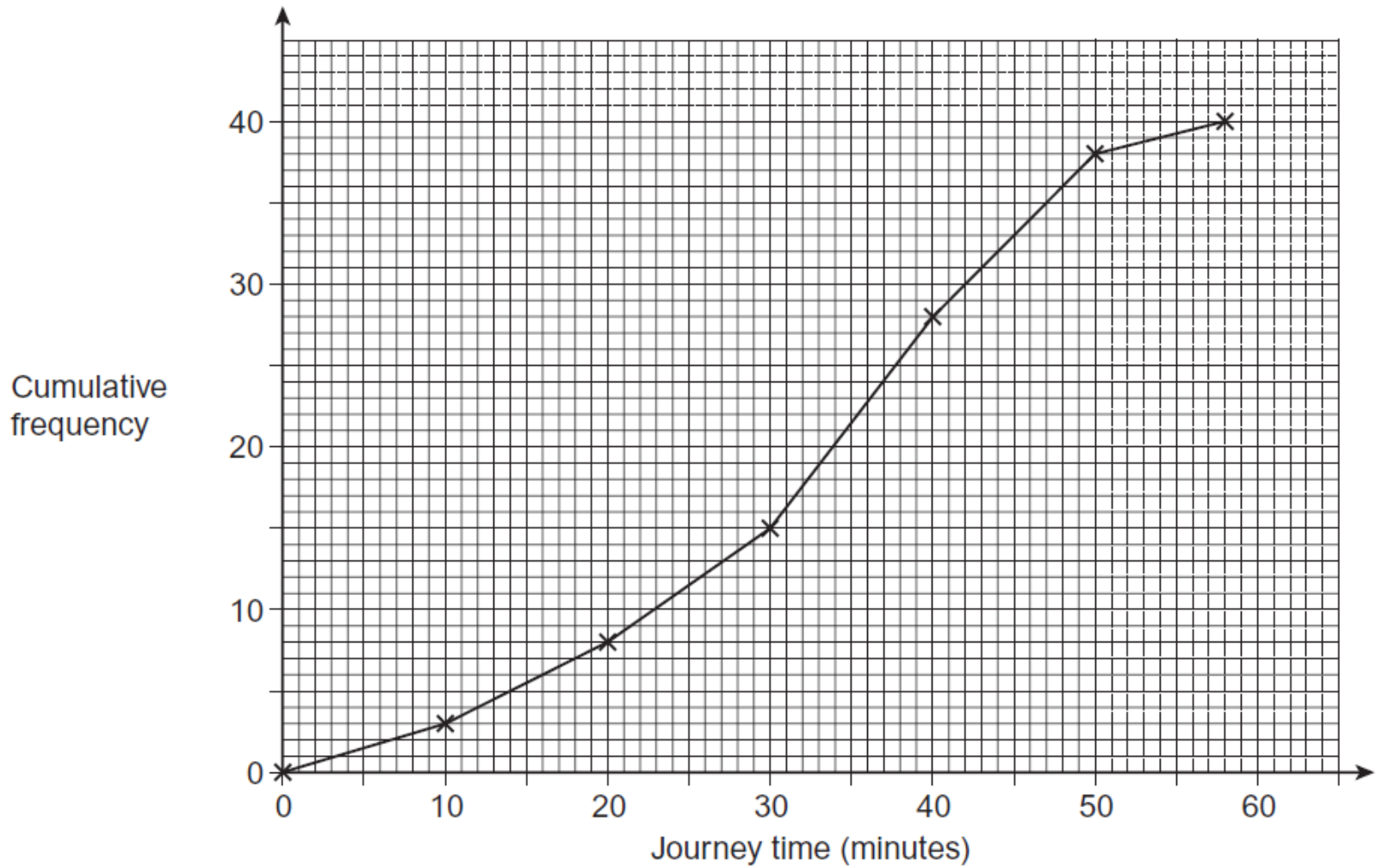
A tennis ball of radius r is packaged in a cylindrical box. The ball touches the sides, top and base of the box.



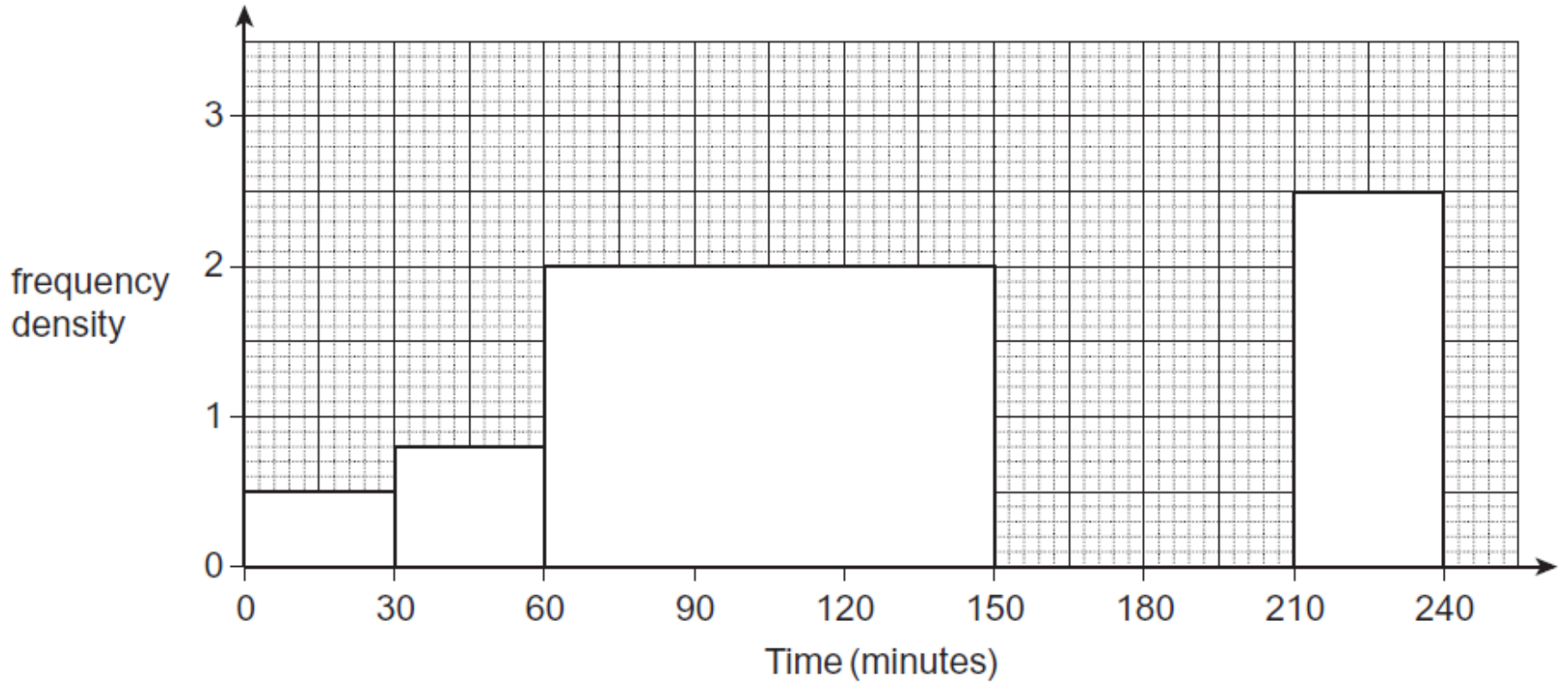
Prompt 6



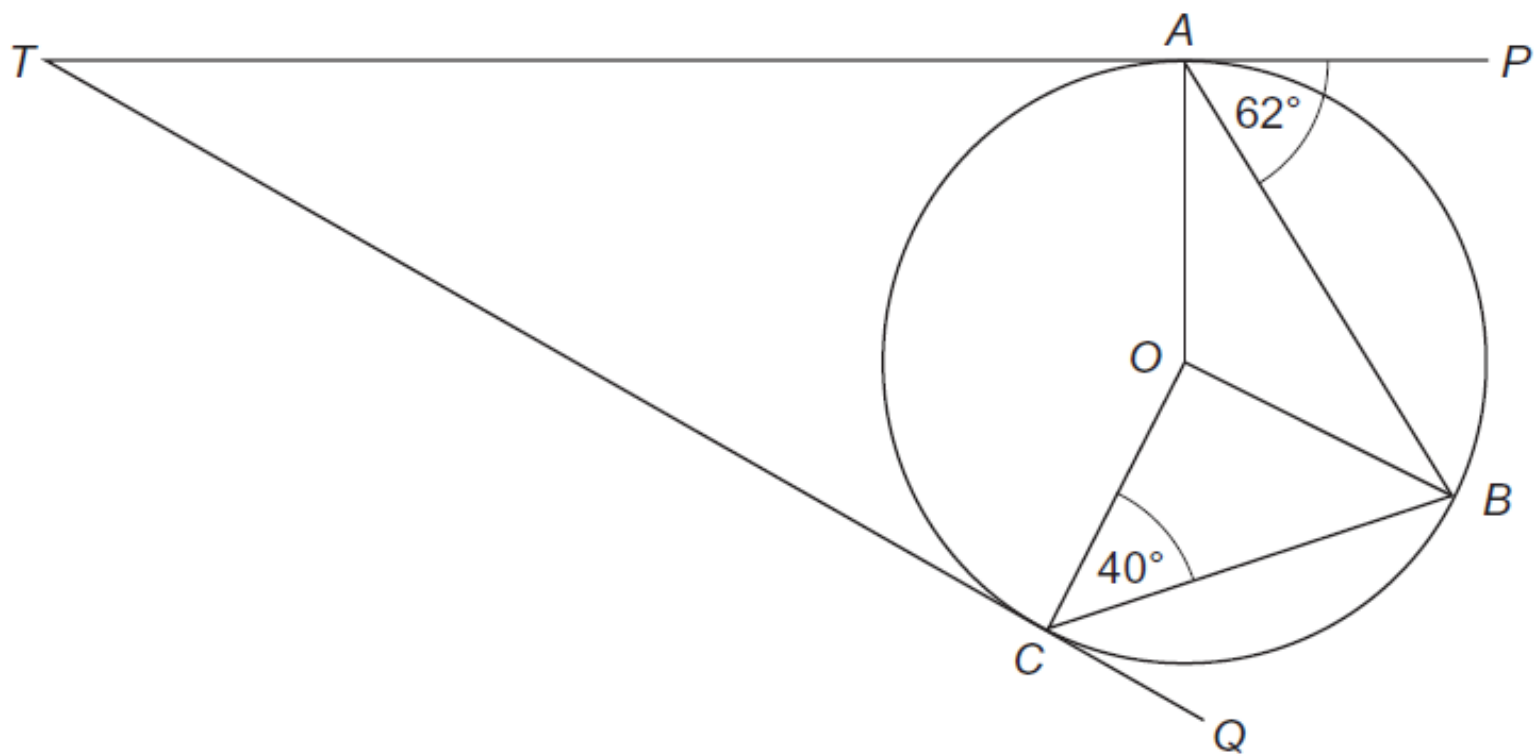
Prompt 7



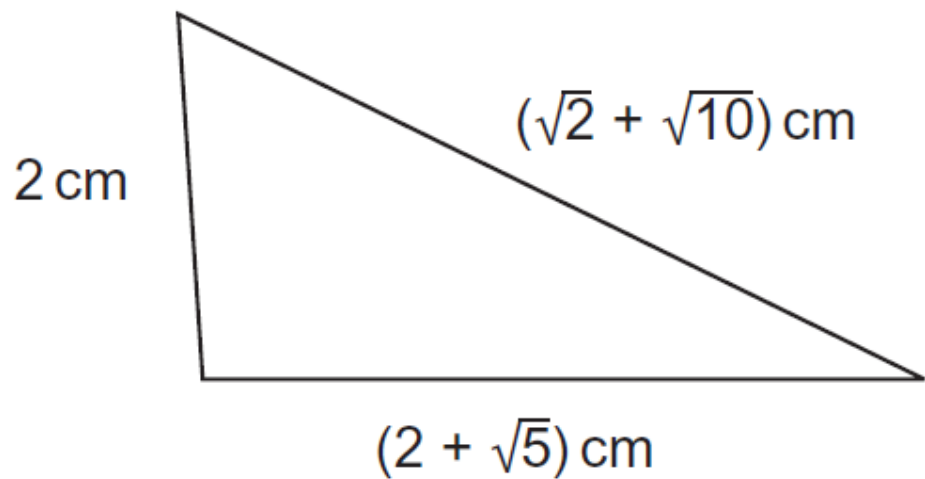
Prompt 8



Prompt 9

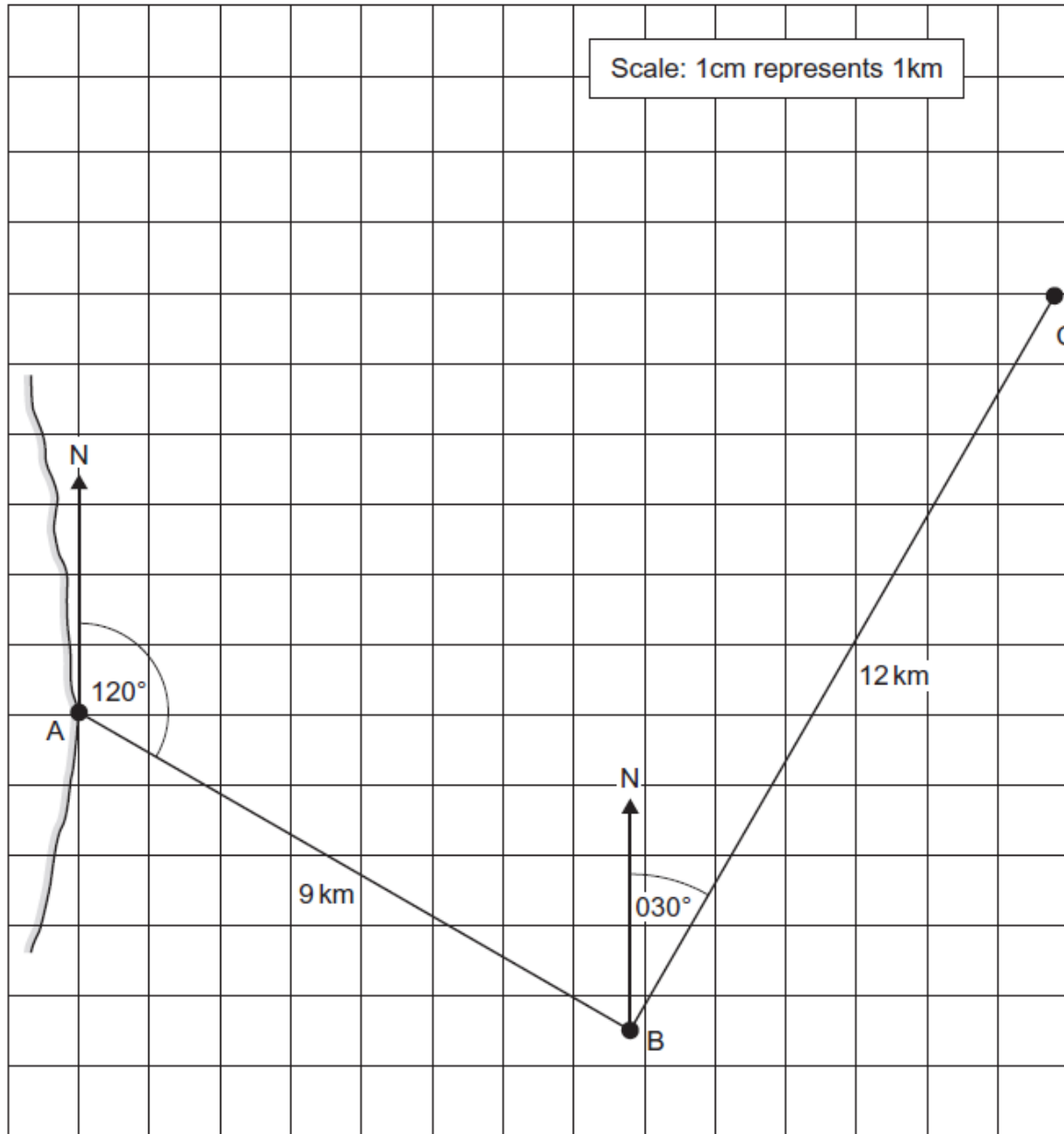


Prompt 10

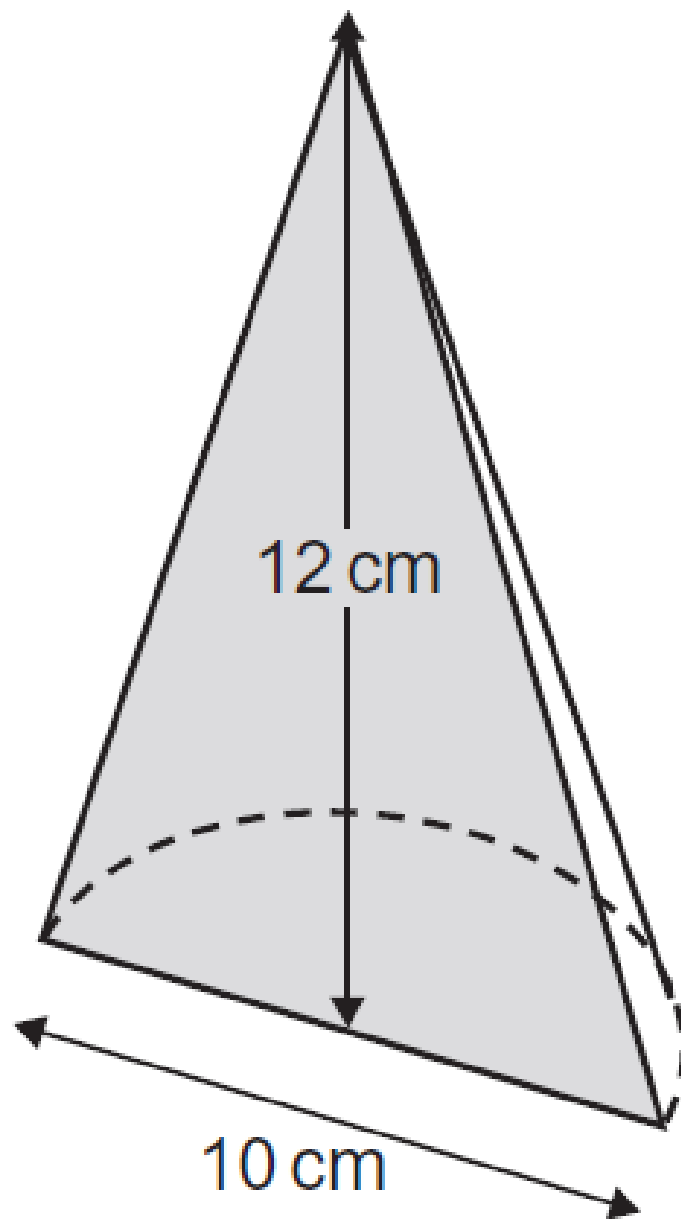


Not drawn accurately

Prompt 11



Prompt 12

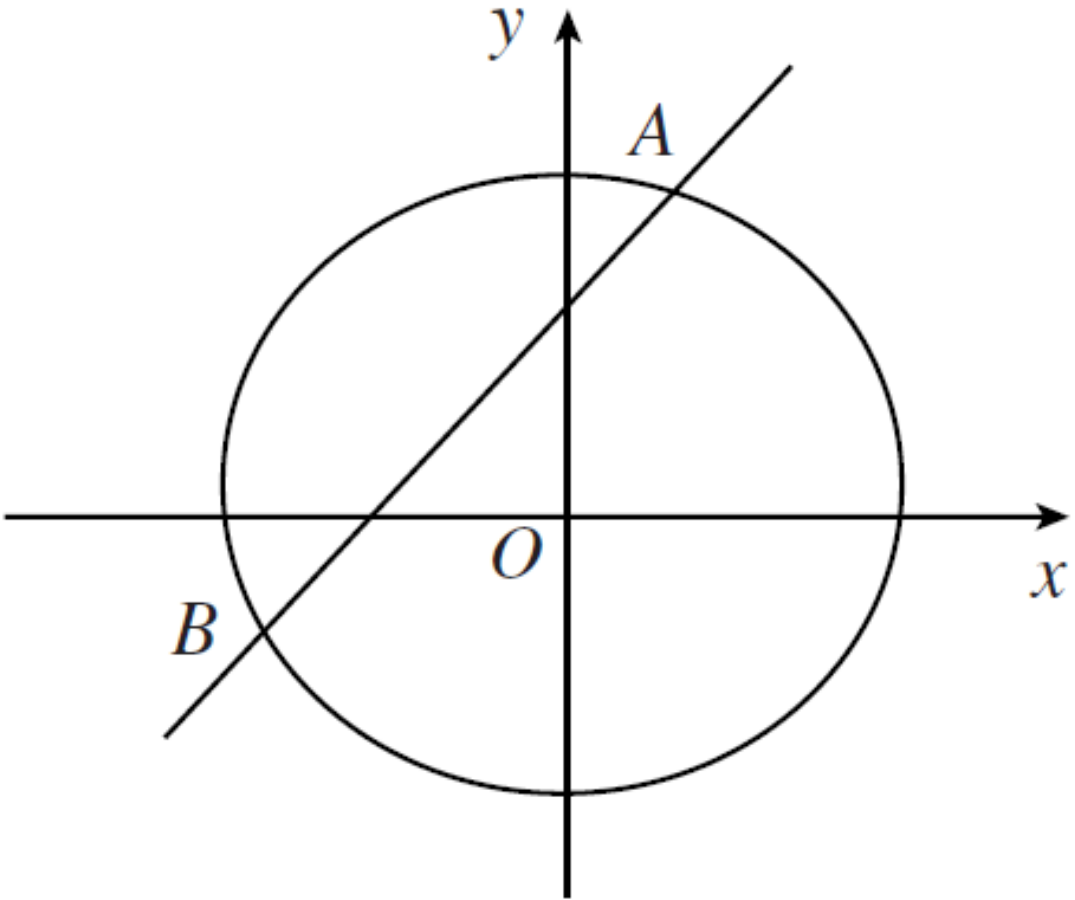


Prompt 13

In January 2008 the following statistics were released by the United States government.

- There are 2.5×10^8 passenger vehicles in the United States.
- On average 2×10^7 barrels of fuel are used by these vehicles each day.
- One barrel contains 42 gallons.
- On average each passenger vehicle travels 18 miles on one gallon of fuel.

Prompt 14

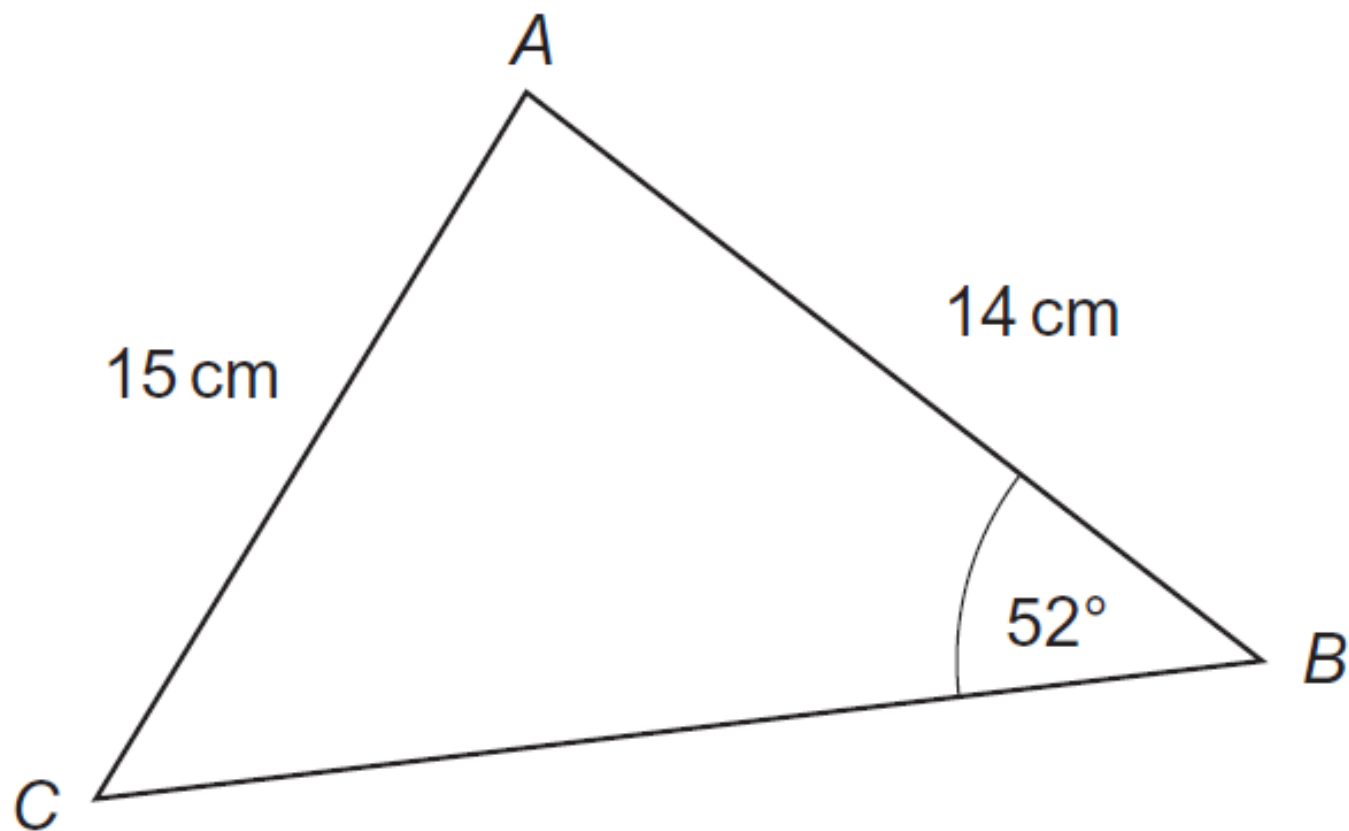


Prompt 15

These ten letters are placed in a hat.

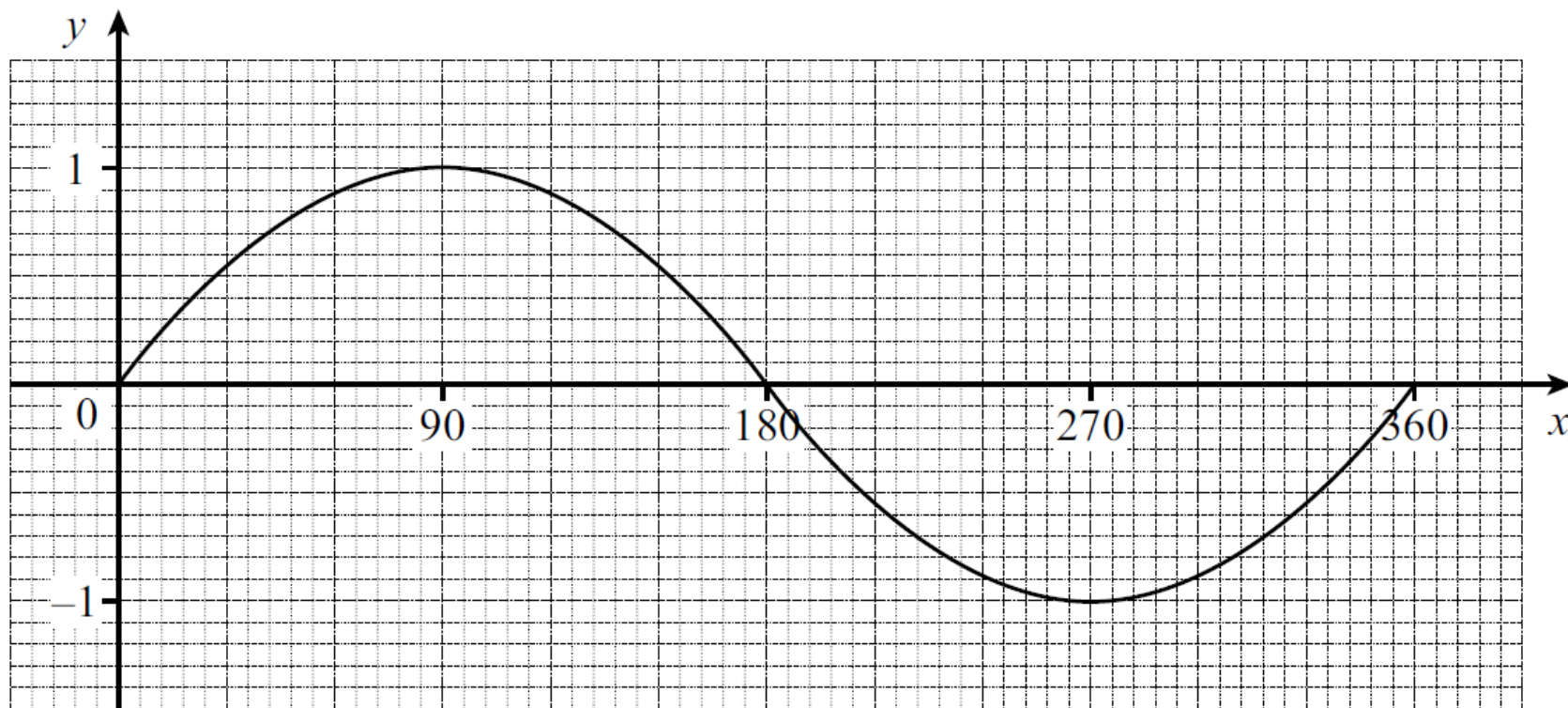
S	T	A	T	I	S	T	I	C	S
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Prompt 16

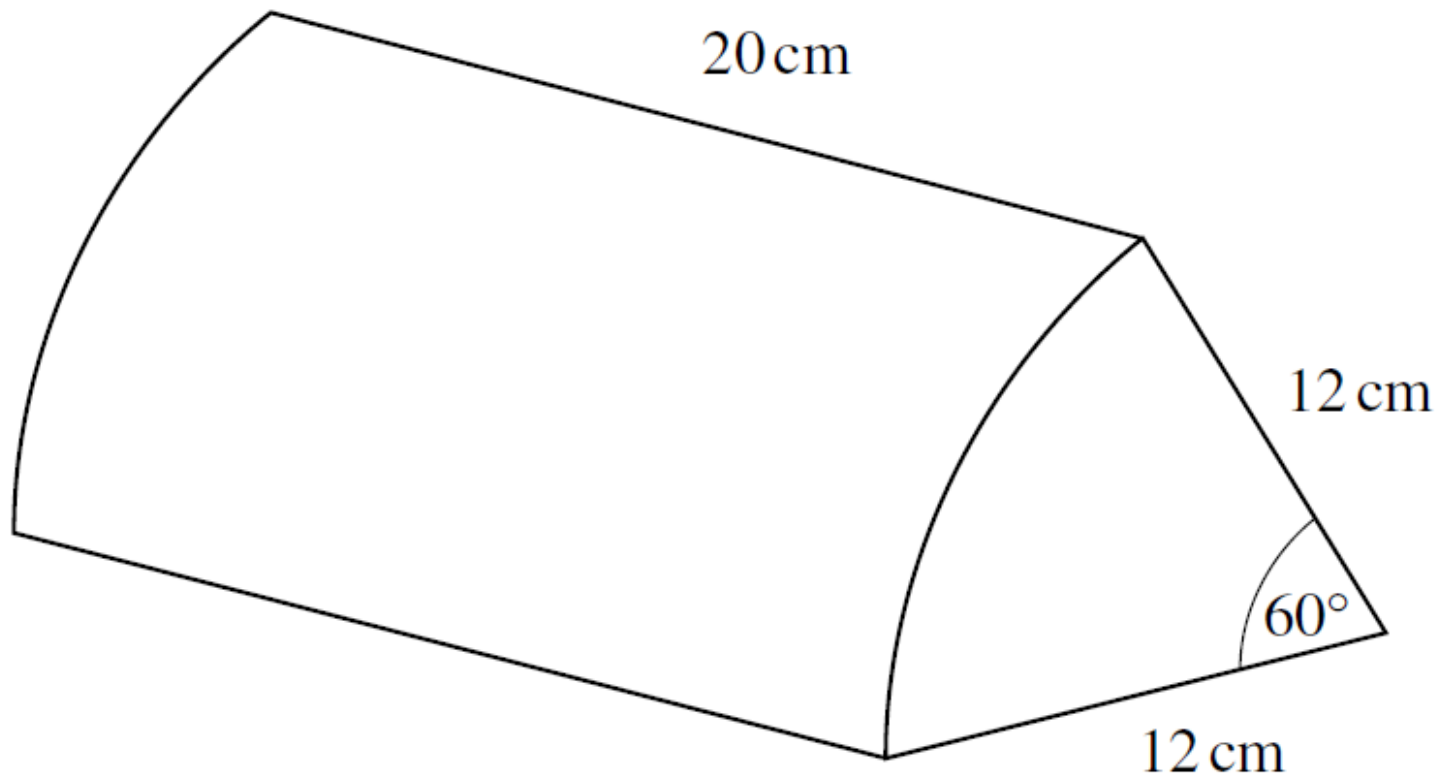


Prompt 17

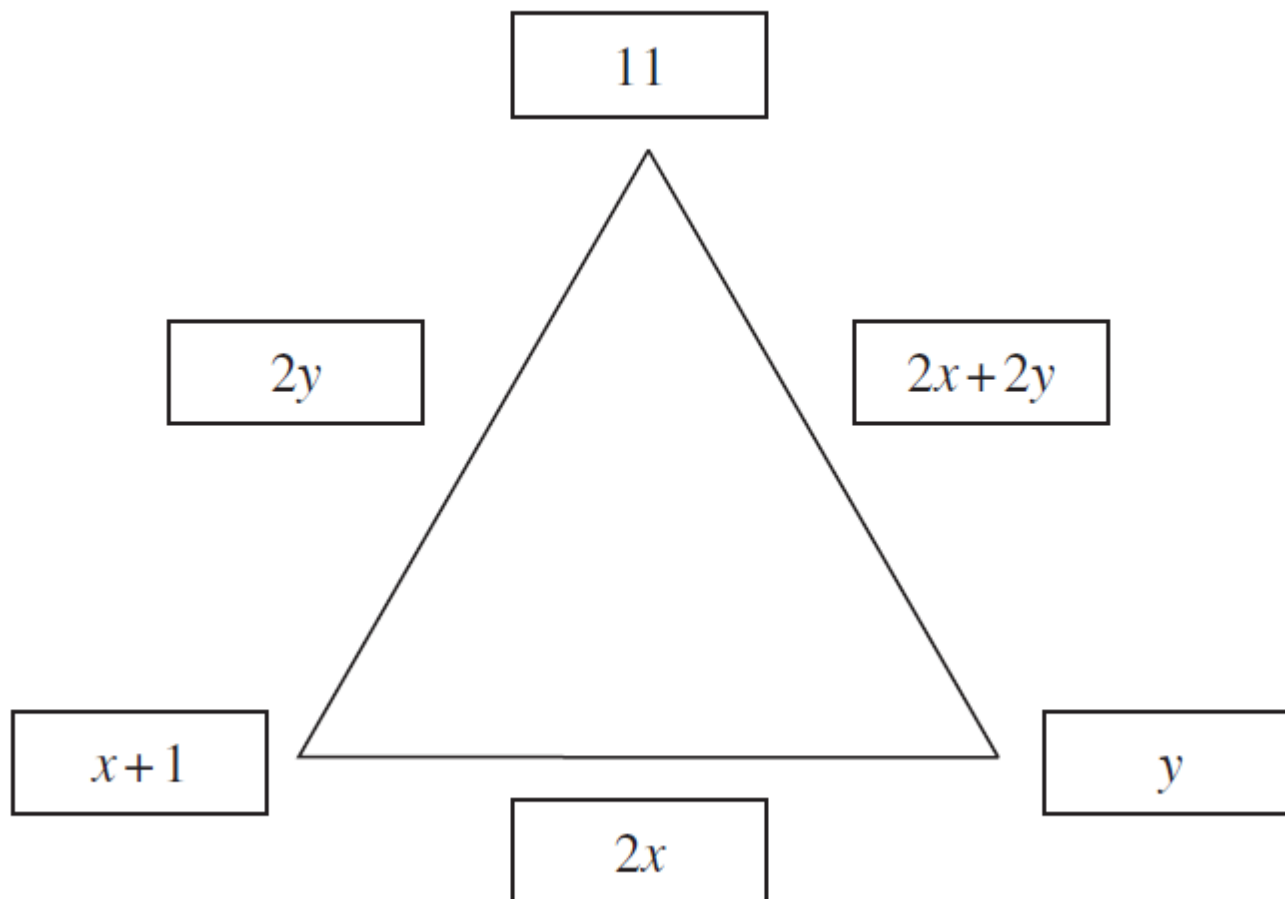
This is the graph of $y = \sin x$ for $0^\circ \leq x \leq 360^\circ$



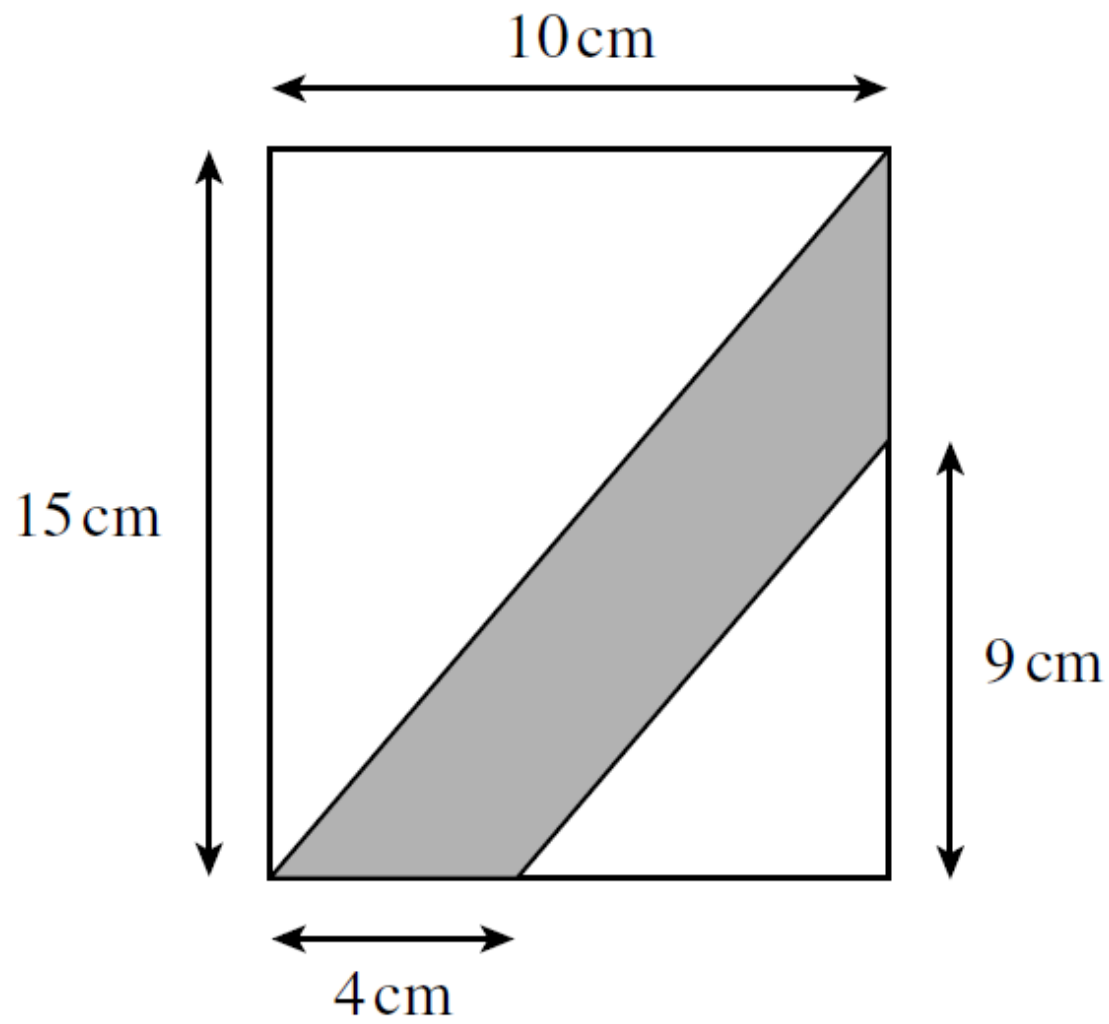
Prompt 18



Prompt 19



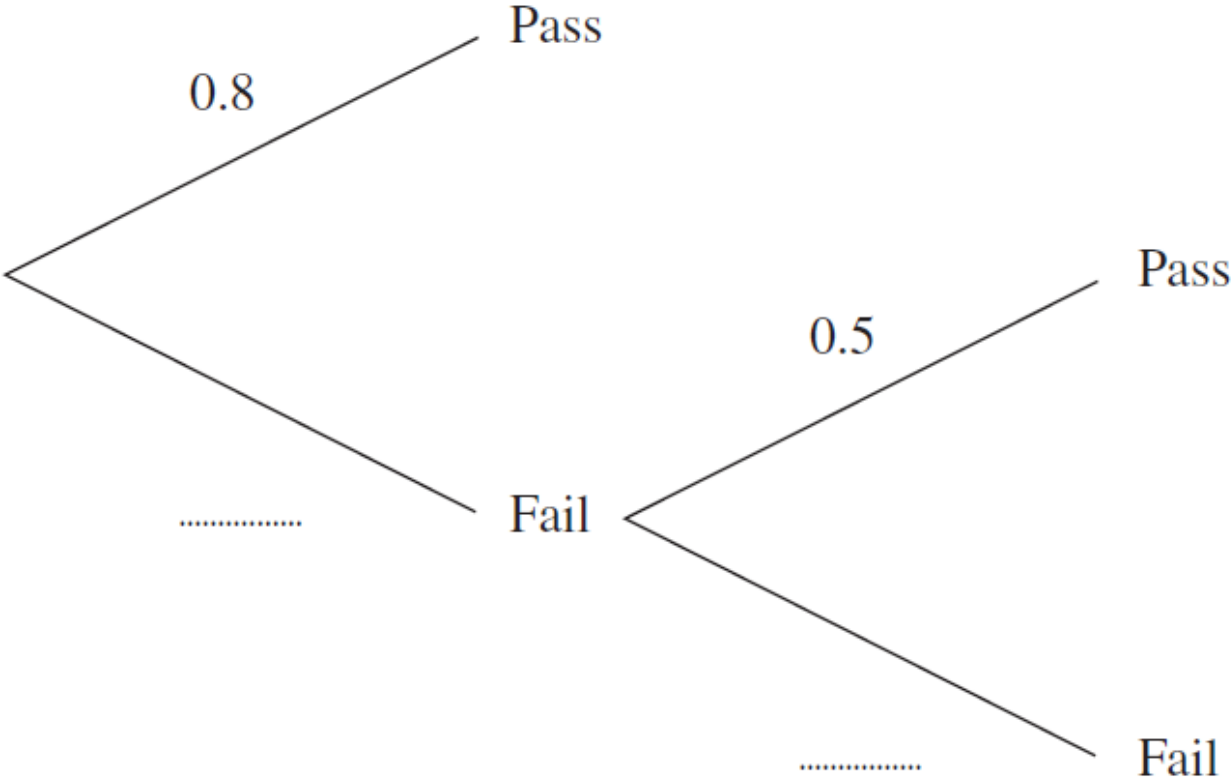
Prompt 20



Prompt 21

First attempt

Second attempt



Prompt 22

One hundred Year 11 students were asked how many text messages they received in a day.

The results are shown in the table.

Number of text messages, t	Frequency	
$0 \leq t < 10$	6	
$10 \leq t < 20$	15	
$20 \leq t < 30$	26	
$30 \leq t < 40$	32	
$40 \leq t < 50$	15	
$50 \leq t < 60$	6	

Prompt 23

Key 5 | 9 represents 59 seconds

1	0	2	4	4	6	7	9		
2	1	1	1	3	3	7	7	8	8
3	3	4	4	8	9				
4	2	7							
5	9								

Time, t seconds	Frequency
$10 \leq t < 20$	3
$20 \leq t < 30$	6
$30 \leq t < 40$	7
$40 \leq t < 50$	4

Prompt 24

$$\frac{2}{3} - \frac{1}{2} = \frac{1}{6}$$

$$\frac{3}{4} - \frac{2}{3} = \frac{1}{12}$$

Prompt 25

A formula used in science is $s = ut + \frac{1}{2}at^2$

During an experiment the following values were recorded.

$u = 2.4$ m/s correct to 2 significant figures.

$t = 10$ sec correct to nearest second.

$a = 0.5$ m/s² correct to 1 significant figure.