

# National 5 Maths Practice Paper F

Paper 1     You may NOT use a calculator

1. Evaluate

$$1\frac{3}{5} + 2\frac{4}{7}.$$

2

2. (a) Factorise

$$4x^2 - y^2.$$

1

- (b) Hence simplify

$$\frac{4x^2 - y^2}{6x + 3y}.$$

2

3. A group of people attended a course to help them stop smoking.

The following table shows the statistics before and after the course.

	Mean number of cigarettes smoked per person per day	Standard deviation
Before	20.8	8.5
After	9.6	12.0

Make **two** valid comments about these results.

2

6. Solve the inequation

$$13 + 4x < 18 - 7(2 - x).$$

3

8. A straight line is represented by the equation  $2y + x = 6$ .

(a) Find the gradient of this line.

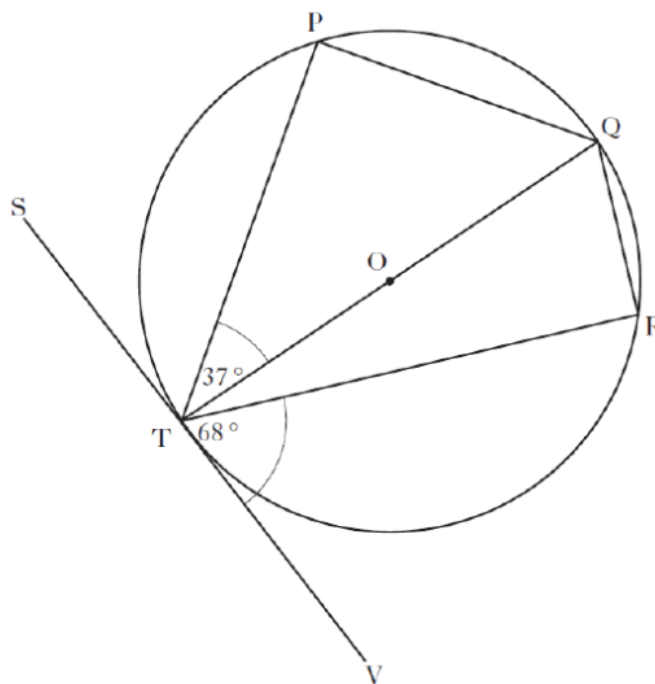
2

(b) This line crosses the  $y$ -axis at  $(0, c)$ . Find the value of  $c$ .

1

9. The tangent  $SV$  touches the circle, centre  $O$ , at  $T$ .

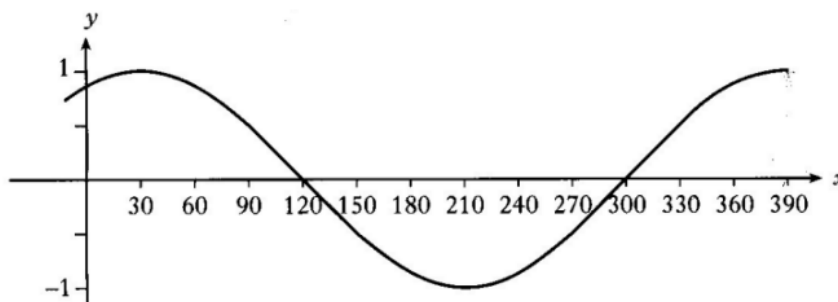
- Angle  $PTQ$  is  $37^\circ$ .
- Angle  $VTR$  is  $68^\circ$ .



Calculate the size of angle  $PQR$ .

3

10. The graph shown below has an equation of the form  $y = \cos(x - a)^\circ$ .



Write down the value of  $a$ .

1

11. Cleano washing powder is on special offer.



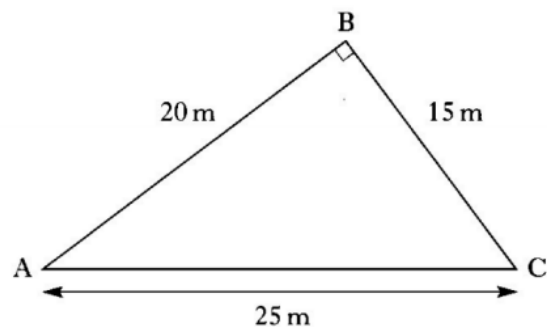
Each box on special offer contains 20% more powder than the standard box.

A box on special offer contains 900 grams of powder.

How many grams of powder does the standard box contain?

13. Triangle ABC is right-angled at B.

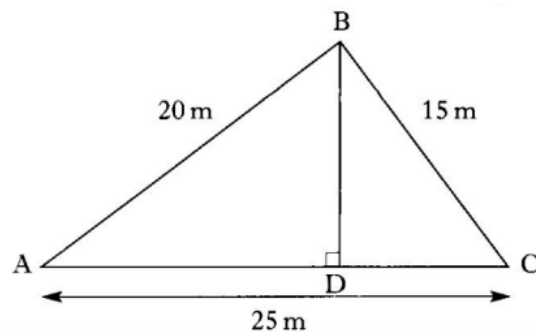
The dimensions are shown.



- (a) Calculate the area of triangle ABC.

1

BD, the height of triangle ACB is drawn as shown.



- (b) Use your answer to part (a) to calculate the height BD.

3