Show all working – Calculator required for Qu 3 & 4 only.

1. Factorise: $12x^2 + 8x^5 - 6x^3y^2$ **(2)**
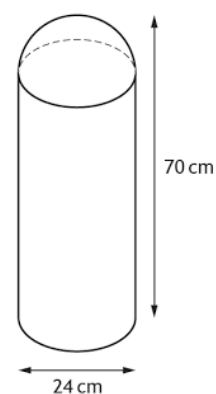
2. Calculate and express your answer as a Mixed Number: $1\frac{3}{4} \times 2\frac{2}{3} - \frac{5}{6}$ **(3)**

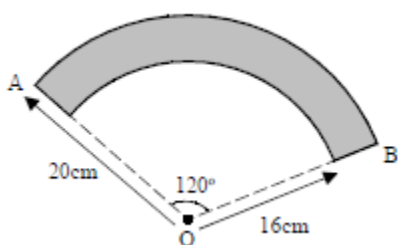**3**. Calculate the volume of the following shape consisting of a

cylinder, diameter 24cm, with a hemisphere on top.

The total height is 70cm.

70 cm

24 cm

(5)

4.

A   20cm   120°   16cm   B   O

In the diagram, O is the centre of two
concentric circles with radii 16cm & 20cm.

Angle AOB = 120°

Calculate the:

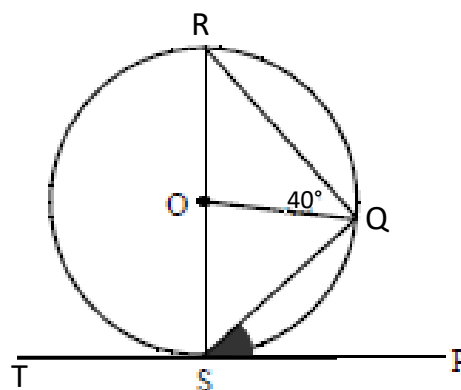**(a)** The perimeter of the shaded shape. **(4)**

(b) The shaded area. **(3)**

5. The diagram shows a circle with centre O.

PT is a tangent to the circle

Angle RQO is 40°

Find the size of the shaded angle PSQ.

R   O   40°   Q   T   S   P

(3)