1. Simplify fully $\dfrac{2x^2-5x+3}{x^2+5x-6}$ (3)

Answer:_____

2. The diagram shows a solid shape.

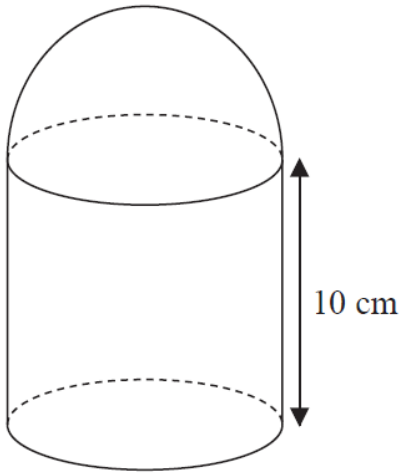


Diagram **NOT** accurately drawn

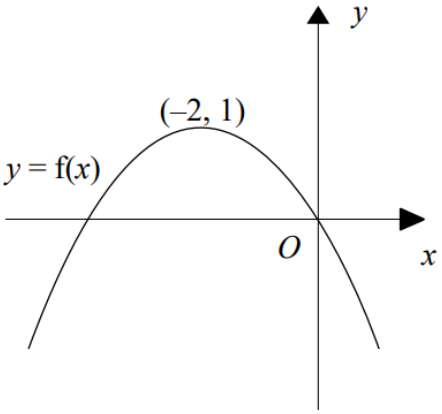
The solid shape is made from a cylinder and a hemisphere.
The radius of the cylinder is equal to the radius of the hemisphere.

The cylinder has a height of 10 cm.
The curved surface area of the hemisphere is 32π cm^2.

Work out the total surface area of the solid shape.
Give your answer in terms of π. (5)

Answer:_____

3. The graph of $y = f(x)$ is shown below. (4)



The coordinates of the maximum point of this curve are $(-2, 1)$.

Write down the coordinates of the turning point of the curve with equation:

a) $y = f(x - 3)$ _____

b) $y = f(-x)$ _____

c) $y = -f(x + 2)$ _____

d) $y = f(-x) - 1$ _____

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4. Simplify $\dfrac{5+2\sqrt{3}}{2+\sqrt{3}}$ (3)

Answer:_____

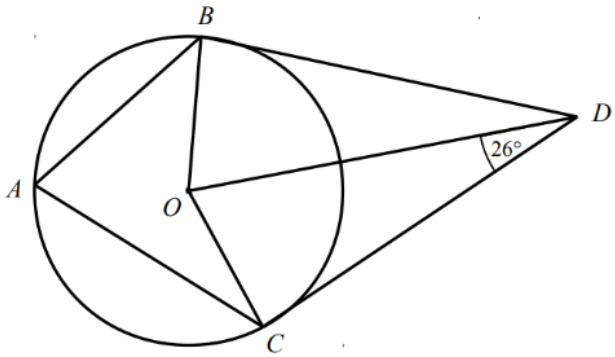
5.

A, B and C are points on the circumference of a circle, centre O.

BD and CD are tangents to the circle.

Angle $ODC = 26°$.

Find the size of angle BAC. Give reasons for each stage of your working.



(4)

Answer:_____