Question 1. What is the equation of a horizontal line containing the point $(3, -2)$?

Question 2. What is an equation of a line containing the point $(5, 1)$ whose slope is 4?

Question 3. What is the area and circumference of a circle whose diameter is 6 feet?

Solutions on the next page

Question 1. What is the equation of a horizontal line containing the point $(3, -2)$?
Solution: Horizontal lines are of the form $y = b$, where b is the constant y-coordinate. Here, the y-value should be -2, so the equation is $y = -2$.

Question 2. What is an equation of a line containing the point $(5, 1)$ whose slope is 4?
Solution: We can use point-slope form for the equation of a line:

$$(y - y_1) = m(x - x_1)$$

where m is the slope (here $m = 4$), and (x_1, y_1) is the point that must be contained by the line - here, $(5, 1)$. We get:

$$(y - 1) = 4(x - 5)$$

Simplifying:

$$y = 4x - 19$$

Question 3. What is the area and circumference of a circle whose diameter is 6 feet?
Solution: If the diameter is 6 feet, the radius is 3 feet.
Area:

$$A = \pi r^2 = \pi(3ft)^2$$

and the area is $9\pi ft^2$.
Circumference:

$$C = 2\pi r = 2\pi(3ft)$$

and the circumference is $6\pi ft$.