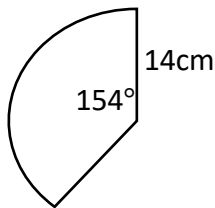1. Solve each system of equations below:
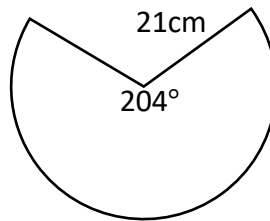
a) $3x - 5y = 16$
$2x - 3y = 10$

b) $4x + 3y = -4$
$2x - 5y = 24$

2. Calculate the area of each of sector below.

a)

14cm

154°

b)

21cm

204°

3) Planet Earth has a volume of 1.083×10^{12} cubic km.
Assuming the Earth is an exact sphere, calculate the radius of Earth.
Give your answer in scientific notation correct to 3 significant figures.

$$\text{Volume of Sphere} = \frac{4}{3}\pi r^3$$

4) Write down the gradient and y-intercept of each of these straight lines:

a) $4x + 3y - 21 = 0$
d) $5x + 4y - 4 = 0$

b) $5x - 3y - 21 = 0$
e) $3x - 8y - 12 = 0$

c) $2x + 3y + 9 = 0$
f) $y = 4$

5) Factorise each expression:

a) $x^2 - 4x - 12$
d) $3x^2 + 5x - 2$

b) $2x^2 + 5x - 12$
e) $4x^2 + 16x + 7$

c) $18 - 8x^2$
f) $3x^2 + 4x - 4$

6) A function has equation $f(x) = 3a^x$. Evaluate $f(x)$ when $a = 16$ and $x = -\frac{1}{2}$

7) A rectangle has an area of $(2x^2 - 11x + 14)$cm^2.
Find expressions for its length and breadth.