Question 13 **B**

$2x - ay = a - 2$

$\Rightarrow y_1 = \frac{2}{a}x + \frac{2-a}{a}$

$ax - 8y = a$

$\Rightarrow y_2 = \frac{a}{8}x - \frac{a}{8}$

For infinite solutions:

$m_1 = m_2$

$\Rightarrow \frac{a}{8} = \frac{2}{a}$

$a = \pm 4$

$c_1 = c_2$

$\Rightarrow \frac{2-a}{a} = -\frac{a}{8}$

$a = 4$

Question 14 **D**

$$\text{area} = \int_0^b (f(x) - g(x))dx + \int_b^c (g(x) - f(x))dx - \int_c^d f(x)dx$$

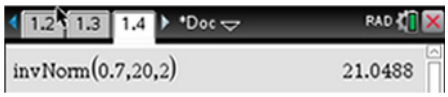
$$= \int_0^b (f(x) - g(x))dx + \int_c^b (f(x) - g(x))dx + \int_d^c f(x)dx$$

Question 15 **C**

$\Pr(X > a) = 0.3$

$\Rightarrow \Pr(X < a) = 0.7$

$X \sim N(20, 2^2)$



Question 16 **B**

The derivative graph indicates three turning points at approximately –0.6, 0 and 0.6, so the solution could be either **B** or **C**.

For $x > 0.6$, $f'(x) > 0$, option **B** is thus the correct solution.