

Question 1

$$c) \quad z = 5x^3y^2 + 3x^2 + 4y^4$$

Question 2

$$a) \quad \frac{2x+3}{6} = \frac{x}{3} + \frac{5x-1}{6} \quad \times 6$$

$$2x+3 = 2x + 5x-1$$

$$2x+3 = 7x-1 \quad -2x \quad 8+1$$

$$4 = 5x$$

$$5x = 4$$

$$x = \frac{4}{5} = \textcircled{0.8}$$

$$ii) \quad 2 \ln(x+6) = \ln(x+3) + \ln(x+7)$$

$$\cancel{\log}(x+6)^2 = \cancel{\log}(x+3)(x+7)$$

$$(x+6)(x+6) = (x+3)(x+7)$$

$$x^2 + 6x + 6x + 36 = x^2 + 7x + 3x + 21$$

$$\cancel{x^2} + 12x + 36 = \cancel{x^2} + 10x + 21 \quad -x^2$$

$$2x + 36 = 21 \quad -10x$$

$$2x = -15 \quad -36$$

$$x = -\frac{15}{2} \quad \div 2$$

$$\boxed{= -7.5}$$

ANSWER