1 Q1

$$t_A = \frac{a + 4m + b}{6} = \frac{8 + 40 + 24}{6} = 12$$

$$t_B = \frac{a + 4m + b}{6} = \frac{1 + 20 + 9}{6} = 5$$

$$t_e = t_A + t_B = 17 \text{ days.}$$

$$s_a = \frac{b - a}{6} = \frac{8}{3}$$

$$s_b = \frac{b - a}{6} = \frac{4}{3}$$

$$S = \sqrt{\sum_{i \in \{a,b\}} s_i^2} \approx 3 \text{ days.}$$

$$Z = \frac{T - t_e}{S} = 1$$

$$P = \Phi(1) = 0.843$$

2 Q2

$$t_1 = \frac{a + 4m + b}{6} = \frac{2 + 12 + 6}{6} = \frac{20}{6}$$

$$t_2 = \frac{a + 4m + b}{6} = \frac{4 + 36 + 8}{6} = 8$$

$$t_3 = \frac{a + 4m + b}{6} = \frac{3 + 24 + 6}{6} = \frac{43}{6}$$

$$t_e = t_1 + t_2 + t_3 = 18.5 \text{ days.}$$

$$s_1 = \frac{b - a}{6} = \frac{4}{6}$$

$$s_2 = \frac{b - a}{6} = \frac{4}{6}$$

$$s_3 = \frac{b - a}{6} = \frac{3}{6}$$

$$S = \sqrt{\sum_{i=1}^{3} s_i^2} = \frac{\sqrt{41}}{6} \approx 1.06 \text{ days.}$$

$$Z = \frac{T - t_e}{S} = -2.29$$

$$P = \Phi(-2.29) = 0.01$$

3 Q3

$$t = \frac{a + 4m + b}{6} = \frac{36 + 84 + 6}{6} = 21$$

$$s_1 = \frac{b - a}{6} = 5$$