

1.6

Integrals

$$a. \int_2^4 u^3 du = \frac{1}{4} u^4 \Big|_2^4 = \frac{256-16}{4} = \frac{240}{4} = 60$$

$$b. \int_1^2 e^u du = e^u \Big|_1^2 = e^2 - e^1 = \boxed{e(e-1)}$$

$$c. \int_1^4 (2u^2 + 4) du = \frac{2}{3} u^3 + 4u \Big|_1^4 = \frac{128}{3} + \frac{16 \cdot 3}{3} - \left(\frac{2}{3} + 4 \right) = \frac{176}{3} - \frac{14}{3} = \frac{162}{3} = \boxed{54}$$