

Evaluate the following expressions in standard form corrected to 3 decimal places and in engineering notation corrected to 3 significant figures.

$$1. \frac{201 \times 154}{0.65}$$

$$2. \frac{221 \times 10^3 \times 255}{3.3}$$

$$3. \frac{452 \times 10^{-3} \times 12 \times 10^9}{25 \times 10^3}$$

A. Calculate the tensile stress in a tie rod with cross sectional area of $2.19 \times 10^{-3} \text{ m}^2$ when carrying a load of 1.04 kN using the formulae:

$$\text{Tensile stress} = \frac{\text{Tensile load}}{\text{Cross - section area}}$$

State your answer in kPa correct to 3 significant figures.

B. A capacitor produced by the company cost £10.15 and a buyer requires a batch of 100. What will be the cost if a discount of 35% is allowed for this quantity? Give your answer correct to 2 decimal places

C. Calculate the tensile stress in a tie rod with cross sectional area of $5.18 \times 10^{-3} \text{ m}^2$ when carrying a load of 1.23 kN using the formulae:

$$\text{Tensile stress} = \frac{\text{Tensile load}}{\text{Cross - section area}}$$

State your answer in kPa correct to 3 significant figures.

D. A capacitor produced by the company cost £11.05 and a buyer requires a batch of 110. What will be the cost if a discount of 30% is allowed for this quantity? Give your answer correct to 2 decimal places

E. Calculate the tensile stress in a tie rod with cross sectional area of $1.11 \times 10^{-3} \text{ m}^2$ when carrying a load of 2.24 kN using the formulae:

$$\text{Tensile stress} = \frac{\text{Tensile load}}{\text{Cross - section area}}$$

State your answer in kPa correct to 3 significant figures.

F. A capacitor produced by the company cost £3.50 and a buyer requires a batch of 210. What will be the cost if a discount of 15% is allowed for this quantity? Give your answer correct to 2 decimal places