

- 21 A mass of a liquid of density ρ is thoroughly mixed with an equal mass of another liquid of density 2ρ . No change of the total volume occurs.

What is the density of the liquid mixture?

- A $\frac{4}{3}\rho$ B $\frac{3}{2}\rho$ C $\frac{5}{3}\rho$ D 3ρ

- 22 Which of the following correctly defines the terms *stress*, *strain* and *Young modulus*?

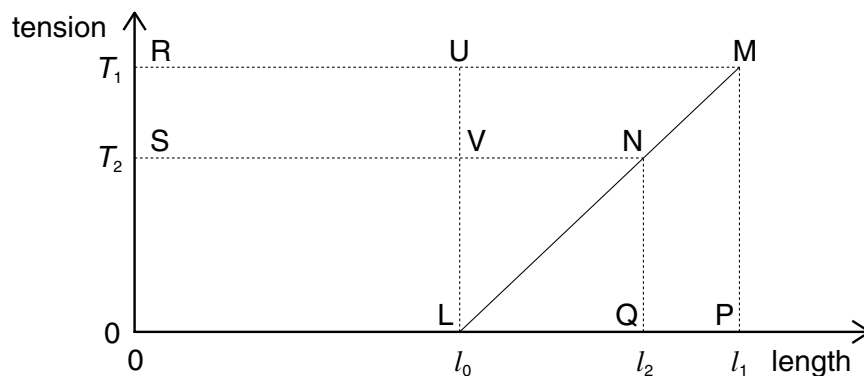
	stress	strain	Young modulus
A	(force) x (area)	(extension) x (original length)	(stress) / (strain)
B	(force) x (area)	(extension) / (original length)	(stress) x (strain)
C	(force) / (area)	(extension) / (original length)	(stress) / (strain)
D	(force) / (area)	(extension) x (original length)	(stress) x (strain)

- 23 A wire is stretched by 8 mm when a load of 60 N is applied.

What will be the extension of a wire of the same material having four times the cross-sectional area and twice the original length, when the same load is applied?

- A 2 mm B 4 mm C 8 mm D 16 mm

- 24 The tension in a spring of natural length l_0 is first increased from zero to T_1 , causing the length to increase to l_1 . The tension is then reduced to T_2 , causing the length to decrease to l_2 (as shown).



Which area of the graph represents the work done by the spring during this reduction in length?

- A MLP B MNQP C MNSR D MPLU