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 $\dfrac{4}{3}\rho$ **B** $\dfrac{3}{2}\rho$ **C** $\dfrac{5}{3}\rho$ **D** 3ρ

22 Which of the following correctly defines the terms *stress*, *strain* and *Young modulus*?
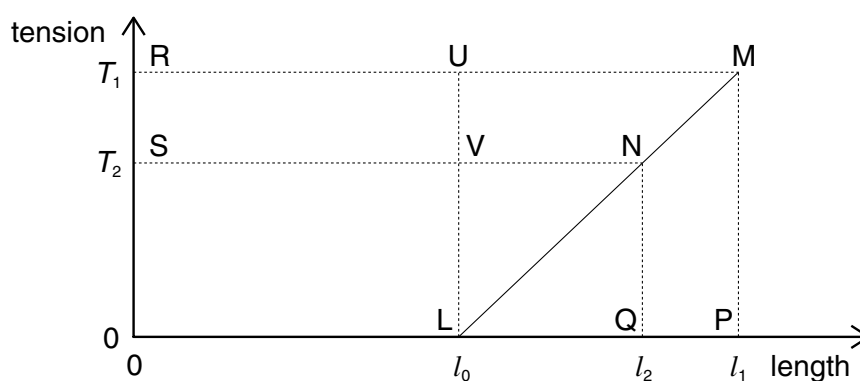
	stress	strain	Young modulus
A	(force) x (area)	(extension) x (original length)	(stress) / (strain)
B	(force) x (area)	(extension) / (original length)	(stress) x (strain)
C	(force) / (area)	(extension) / (original length)	(stress) / (strain)
D	(force) / (area)	(extension) x (original length)	(stress) 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