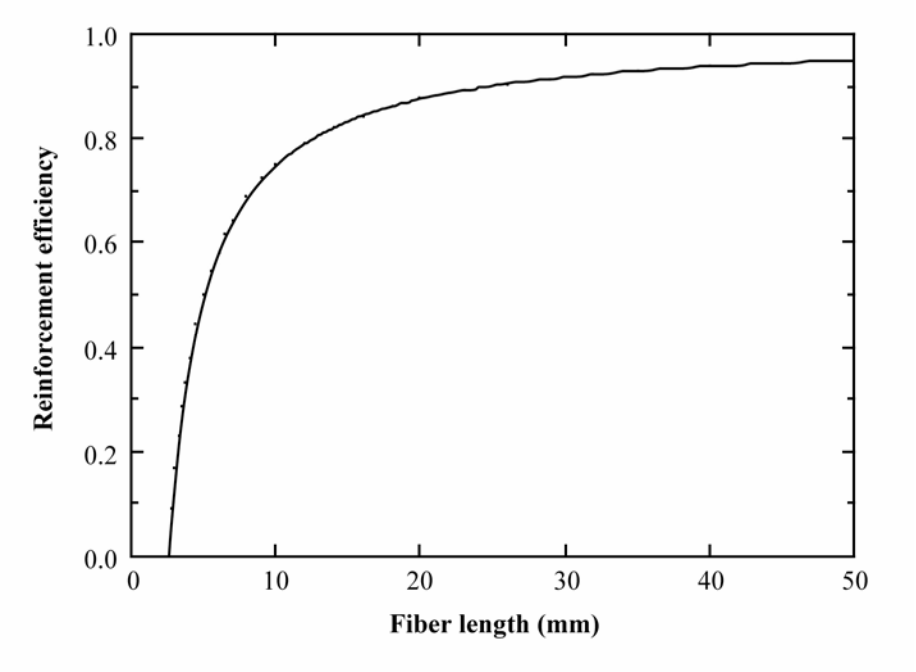
16.7 (a) The plot of reinforcement efficiency versus fiber length is given below.



(b) This portion of the problem asks for the length required for a 0.90 efficiency of reinforcement. Solving for l from the given expression

$$l = \frac{2x}{1 - \eta}$$

Or, when x = 1.25 mm (0.05 in.) and η = 0.90, then

$$l = \frac{(2)(1.25\text{ mm})}{1 - 0.90} = 25\text{ mm}\ \ (1.0\text{ in.})$$