

53. (a) We set up the ratio

$$\frac{50 \text{ km}}{1 \text{ km}} = \left(\frac{E}{1 \text{ megaton}} \right)^{1/3}$$

and find $E = 50^3 \approx 1 \times 10^5$ megatons of TNT.

- (b) We note that 15 kilotons is equivalent to 0.015 megatons. Dividing the result from part (a) by 0.013 yields about ten million bombs.