

## Exercise 78

Many chemistry conferences have held a 50-Trillion Angstrom Run (two significant figures). How long is this run in kilometers and in miles? ( $1 \text{ \AA} = 1 \times 10^{-10} \text{ m}$ )

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### Solution

Start with the given distance and use conversion factors to write it in kilometers.

$$50 \times 10^{12} \cancel{\text{ \AA}} \times \frac{1 \times 10^{-10} \cancel{\text{ m}}}{1 \cancel{\text{ \AA}}} \times \frac{1 \text{ km}}{1000 \cancel{\text{ m}}} = 5.0 \text{ km}$$

Start with the given distance and use conversion factors to write it in miles.

$$50 \times 10^{12} \cancel{\text{ \AA}} \times \frac{1 \times 10^{-10} \cancel{\text{ m}}}{1 \cancel{\text{ \AA}}} \times \frac{3.28 \cancel{\text{ ft}}}{1 \cancel{\text{ m}}} \times \frac{1 \text{ mi}}{5280 \cancel{\text{ ft}}} \approx 3.1 \text{ mi}$$