

## Exercise 1.45

What is the number of significant figures in each of the following measured quantities? (a) 601 kg, (b) 0.054 s, (c) 6.3050 cm, (d) 0.0105 L, (e)  $7.0500 \times 10^{-3} \text{ m}^3$ , (f) 400 g.

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### Solution

- (a) 601 kg - 3 significant figures
- (b) 0.054 s - 2 significant figures
- (c) 6.3050 - 5 significant figures
- (d) 0.0105 L - 3 significant figures
- (e)  $7.0500 \times 10^{-3} \text{ m}^3$  - 5 significant figures
- (f) 400 g - Can't say, because the uncertainty may lie in the hundreds, tens, or ones place ( $4 \times 10^2$  for 1 sig fig,  $4.0 \times 10^2$  for 2 sig figs, or  $4.00 \times 10^2$  for 3 sig figs). Scientific notation is necessary to be specific.