

Chapter 1

① a) i, v

b) vi

c) iv

d) iii, ii

② Chemical - created a new compound that was not present in the original box

⑥ a) 7.5 cm 2 sig figs

b) 140°F 2 sig figs

⑪ a) heterogenous mixture

b) homogenous (heterogenous if not all of the particles are dissolved)

c) pure substance

d) homogenous mixture

⑱ a) chemical

b) physical

c) physical

d) chemical

e) chemical

⑳ a) Dissolve sugar in water

Filter mixture - sand collects on filter

evaporate water from sugar solution

⑳ a) 3

b) 2

c) 5

d) 3

e) 5

Chapter 1 Continued

36 a) 4

b) 3

c) 4

d) 5

e) 6

37 a) 1.025×10^2

b) 6.570×10^5

c) 8.543×10^{-3}

d) 2.579×10^{-4}

e) -3.572×10^{-2}

39 a) 21.11 place value

b) 237.4 place value

c) 652 3 sig figs

d) 7.66×10^{-2} 3 sig figs

40 a) 2300 2 sig figs

b) 8.260×10^7 4 sig figs

c) 34,000 or 3.4×10^4 2 sig figs

d) 7.62×10^5 3 sig figs (make sure to round up)

43 a)

$$\frac{0.076 \text{ L} \times 1000 \text{ mL}}{1 \text{ L}} = 76 \text{ mL}$$

45 a)

$$\frac{5 \text{ days} \times 24 \text{ hr} \times 60 \text{ min} \times 60 \text{ s}}{1 \text{ day} \times 1 \text{ hr} \times 1 \text{ min}} = 432,000 \text{ s.}$$

(3 s.f.)