Answers pg 349 #3,4,6,9

3. (a) $\checkmark\checkmark$? 7.65 mm has three significant digits.

(b) $\checkmark\checkmark$? 20.2 m/s has three significant digits.

(c) $\checkmark\checkmark$? 50.0 cm has three significant digits.

(d) $\checkmark$? 0.084 km has two significant digits.

4. a) 32,674 km
   32.7 km

b) 0.003922 g
   0.00392 g
   or
   3.92 x 10⁻³ g

c) 107.51 s
   108 s

6. a) $22.4h \times \dfrac{0.1mm}{h} = 2.24 mm = 2\ mm$

1 is the fewest S.F.

b) $\dfrac{465km}{5.21h} = 89.2km/h$ 3 is the fewest S.F.

c) $18cm^3 \times \dfrac{1.10g}{cm^3} = 19.8g = 20g$ 2 is the fewest S.F.

d) $72.5min \times \dfrac{1h}{60min} = 1.21h$ 3 SD is the fewest conversion factors do not count towards SD

e) $17.5mL + 95mL + 8.25mL$
       120.75 fewesest decimals is none
       $121mL$

f) $32.1m + 960m + 20.02m$
       $1012.12m$ fewest decimals is none
       $1012m$

g) $0.2 \text{cm} + 23.91 \text{cm} + 0.62 \text{cm}$
           24.73cm 1 is the fewest decimal
           24.7cm

h) $13.63 \text{h} - 0.5 \text{h}$
         13.13h 1 is the fewest decimal
         13.1h

i) $35.1 \text{mm} + 67.04 \text{mm}$
         102.14mm 1 is the fewest decimal
         102.1mm

j) $7.52 \text{s} + 8.678 \text{s} + 0.24 \text{s}$
         16.438s 2 is the fewest decimal
         16.44s

8. a) area = base x height

area = 100.0m x 12m

area (calculator answer) = $1200m^2$

area (correct SD) = $1200m^2$

b) area= base x height

area = 8.23cm x 0.68cm

area (calculator answer) = $5.5964cm^2$

area (correct SD) = $5.6cm^2$

7. a) $34 \text{ min} \times \dfrac{1 \text{ hr}}{60 \text{min}} = 0.57 \text{ h}$

b) $0.510 \text{ km} \times \dfrac{1000 \text{m}}{1 \text{ km}} = 510 \text{m}$

c) $0.021 \text{ h} \times \dfrac{60 \text{min}}{1 \text{h}} \times \dfrac{60 \text{sec}}{1 \text{min}} = 76 \text{ sec}$

d) $25 \dfrac{\text{km}}{\text{h}} \times \dfrac{1000 \text{ m}}{1 \text{ km}} \times \dfrac{1 \text{ hr}}{60 \text{min}} \times \dfrac{1 \text{ min}}{60 \text{sec}} = 6.9 \text{ m/s}$

or 25km/h x $\dfrac{1\text{km/h}}{3.6\text{m/s}}$ = 6.94