Friday, September 21/12
Science 10

1. Bell Work
2. ICA (In Class Assignment) - Return
3. Textbook Scavenger Hunt - Complete by Monday of Next Week
4. Certainty Rule for Multiplying and Dividing (Page 345)
5. Precision Rules for Adding and Subtracting (Page 346)
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Stopped Here P6

7. Converting Units (Page 348)
8. Page 349: Understanding Concepts #9

# Bell Work - Science 10 : Sept. 21/12

Copy each of the following measured or calculated values.

a) Place a check mark above each certain digit and a question mark above each estimated or uncertain digit.

b) State the certainty of each measurement as a number of significant digits.

(i) 45.09 kg

4 SD

(ii) 0.00206 km

3 SD

(iii) $7.20 \times 10^2$ s

3 SD

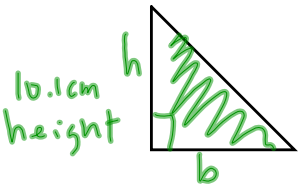
( iv) 5090.0 km

5 SD

## Certainty Rule for Multiplying and Dividing

Page 345

When multiplying and/or dividing, the answer has the same number of significant digits as the measurement with the fewest number of significant digits.




10.1 cm height

3.2 cm base

Find the area of the triangle.

$A = \frac{1}{2}bh$ area

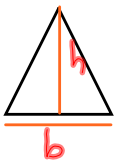
$A = \frac{1}{2}(3.2\text{cm})(10.1\text{cm})$

$A = 16.16\text{cm}^2$

$A = 16\text{ cm}^2$ (2 SD)

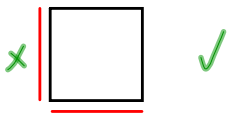
$16.16\text{cm}^2$

$16.72\text{cm}^2$

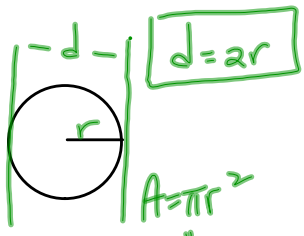



$A = \frac{1}{2}bh$


$A = bh$



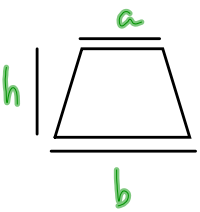

$A = x^2$




$d = 2r$

$A = \pi r^2$

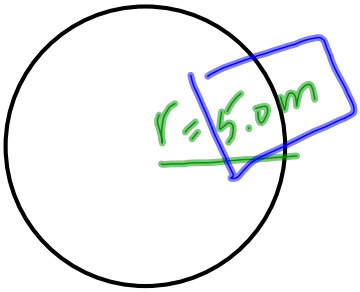
$\pi$ 3.14




trapezoid

$A = \frac{1}{2}(a+b)h$

**Example:** Find the area of the circle.




$A = \pi r^2$ ①

$A = \pi (5.0\ m)^2$ ①

$A = 78.53981634\ m^2$

$A = 79\ m^2$

p. 349. #6. (a-d)

#6. a) $22.4\ h \times 0.1\ mm = 2.2\ mm$ (3 SD × 1 SD = 1 SD)

b) $\frac{465\ km}{5.21\ h} = 89.3\ \frac{km}{h}$ (3 SD / 3 SD = 3 SD)

c) $18\ cm^3 \times 1.10\ \frac{g}{cm^3} = 19.8\ g = 20\ g$ (2 SD × 3 SD = 2 SD)

d) $72.5\ min \times \frac{1\ h}{60\ min} = 1.21\ h$ (3 SD)

defined value.

## Precision Rule for Adding and Subtracting Page 346

Precision is measured by the number of decimal places in a measured or calculated value.

**When adding and subtracting measured values of known precision, the answer has the same number of decimal places as the measured value with the fewest decimal places.**

Example:

$$\begin{array}{rl} 1.2 & \text{mm} \\ 3.05 & \text{mm} \\ +\ 7.60 & \text{mm} \\ \hline 11.85 & \text{mm} \end{array} \Rightarrow 11.9\text{mm}$$

Example: Subtract 21.423cm from 137.21 cm.

$$\begin{array}{rl} 137.21 & \text{cm} \\ -\ 21.423 & \text{cm} \\ \hline 115.787 & \text{cm} \end{array}$$

Understanding Concepts - Page 349: #6-8