

Reflection and Self-Assessment

Part 1: Circle the statement that best describes how you completed the practice:

- I answered all questions without using the online solutions. I checked my answers against the key at the back of the practice and was able to determine my mistakes and correct them without referring to the online solutions.
- I answered most questions correctly without using the online solutions. I used the online solutions to help me with some questions and was able, with help from the online solutions, to understand every question and answer them correctly.
- I used the online solutions to help me with most of the questions. I was able, with help from the online solutions, to understand each question and answer them correctly.
- Even using the online solutions, I was not able to fully understand the solution to some problems. The questions I had trouble with were:

- I did not attempt all the questions on the practice.

Part 2: Circle the statement that best describes your confidence in answering questions of this type in the future.

- I am confident I can answer nearly any question of this type correctly without using notes or other assistance.
- I am confident I can answer **MOST** questions of this type correctly without using notes or other assistance.
- I am **NOT** confident I can answer most questions of this type correctly without using notes or other assistance.

Formula Manipulation Practice

Name: _____

1. Using the formula $v = \frac{d}{t}$ determine v in each of the following cases with attention to units and significant figures.

a. $d = 5.0$ metres $t = 12$ seconds

b. $d = 5$ metres $t = 12$ seconds

c. $d = 5.0$ miles $t = 12$ hours

d. $d = 560$ kilometres $t = 13$ hours

e. $d = 34$ furlongs $t = 3$ days

Formula Manipulation Practice

Name: _____

2. Using the formula $d = vt$ determine d in each of the following cases with attention to units and significant figures.

a. $v = 5.1$ metres/sec $t = 12$ seconds

b. $v = 19$ metres/sec $t = 5$ seconds

c. $v = 63$ miles/hour $t = 0.52$ hours

d. $v = 56$ kilometres/hour $t = 13$ hours

e. $v = 34$ furlongs per day $t = 9$ days

Formula Manipulation Practice

Name: _____

3. Consider the formula $d = vt$
 - a. Rearrange it to make t the subject.

 - b. Determine the value of t when $d = 4.8$ meters and $v = 0.234$ meters/second.

4. Consider the formula $v_f = v_0 + at$
 - a. Rearrange it to make v_0 the subject.

 - b. Rearrange it to make a the subject.

 - c. Rearrange it to make t the subject.

Formula Manipulation Practice

Name: _____

5. Consider the formula $v_f^2 = v_o^2 + 2ad$
- Rearrange it so v_f not v_f^2 is the subject.
 - Rearrange it so v_o is the subject.
 - Rearrange it so a is the subject.
 - Rearrange it so d is the subject.

Formula Manipulation Practice

Name: _____

6. Consider the formula $E_p = mgh$

a. Rearrange it to make m the subject.

b. Rearrange it to make g the subject.

c. Rearrange it to make h the subject.

7. Consider the formula $E_k = \frac{1}{2}mv^2$

a. Rearrange it to make m the subject.

b. Rearrange it to make v the subject.

Formula Manipulation Practice

Name: _____

Answer Key

1a) 0.42 m/s	1b) 0.4 m/s	1c) 0.42 miles/hr	1d) 43 km/hr	1e) 10 furlongs per day
2a) 61 m	2b) 100 m	2c) 33 miles	2d) 730 km	2e) 300 furlongs
3a) $t = \frac{d}{v}$	3b) 21 sec	4a) $v_o = v_f - at$	4b) $a = \frac{v_f - v_o}{t}$	4c) $t = \frac{v_f - v_o}{a}$
5a) $v_f = \pm\sqrt{v_o^2 + 2ad}$	5b) $v_o = \pm\sqrt{v_f^2 - 2ad}$	5c) $a = \frac{v_f^2 - v_o^2}{2d}$	5d) $d = \frac{v_f^2 - v_o^2}{2a}$	6a) $m = \frac{E_p}{gh}$
6b) $g = \frac{E_p}{mh}$	6c) $h = \frac{E_p}{mg}$	7a) $m = \frac{2E_k}{v^2}$	7b) $v = \pm\sqrt{\frac{2E_k}{m}}$	