ALBERTA DISTANCE LEARNING CENTRE

Science 10 Online

SCN1270

Unit C: Section 2

Assignment C2: Part B

Student's Questions and Comments

FOR STUDENT USE ONLY

Student ID: _____

FOR ADLC USE ONLY

Assigned to: _____

Marked by: _____

Date received: _____

	Total	Total Possible
Lesson 6		12
Lesson 7		18
TOTAL		**30**

Teacher's Comments:

_____

Teacher's Signature

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Unit C: Section 2: Lessons 6 to 7

Energy Flow in Technological Sytems

Assignment C2: Part B

Instructions:

Complete the following assignment. This assignment will count toward your final mark in this course, and you will be allowed to submit this assignment only once. Make sure you answer all the questions. Blank or incomplete assignments will not be accepted for marks.

Remember, the number of marks each question is worth gives you a hint about how detailed you need to make your answers. Calculation questions require you to show all your work. This includes formula, substitution, and answer with correct significant digits and units.

Your online course will provide you with instructions on how to submit this assignment when it is time to submit it.

Total 12

Lesson 6: Velocity vs. Speed

(3)

1. A sprinter is running a 100 m sprint race. The race begins, and the stopwatch is started. The sprinter passes the 12 m [N] mark at 1.92 s and passes the 59 m [N] mark at 7.98 s. What was the sprinter's average velocity between the two time marks? Show all your work.

sprinter

(3)

2. A cheetah runs at a speed of 27.6 m/s. If the cheetah runs for 9.30 s, what is the distance the cheetah runs? Show all your work.

cheetah running

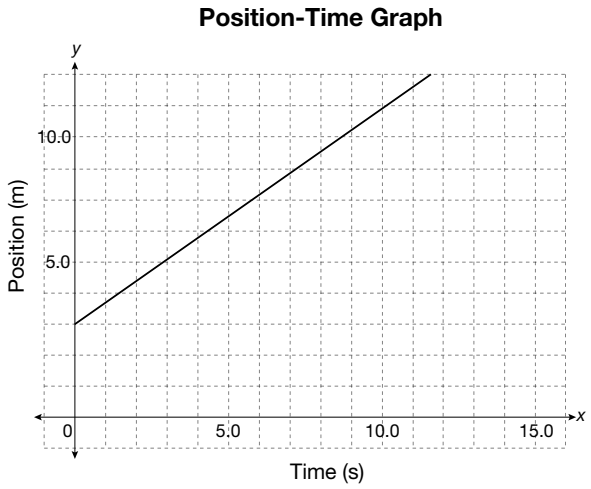
(3)

3. A rifle fires a bullet toward a target 102 m away. If the bullet travels at a supersonic speed of 585 m/s, how long does the bullet take to reach the target? Show all your work.

target with bullet holes

(3)

4. Calculate the velocity of the object's motion represented in the following graph. Show all your work.



Total 18

Lesson 7: Acceleration

(3)

5. An airplane is waiting to take off on the runway at the airport. The plane is then cleared for take off and accelerates down the runway for 26.1 s to reach a 71 m/s lift off velocity. What was the airplane's acceleration on the runway? Show all your work.

airplane on runway taking off

(3)

6. A car is travelling west at 22.2 m/s when it accelerated for 0.80 s to the west at 2.68 m/s^2. Calculate the car's final velocity. Show all your work.

car driving towards on highway

(3)

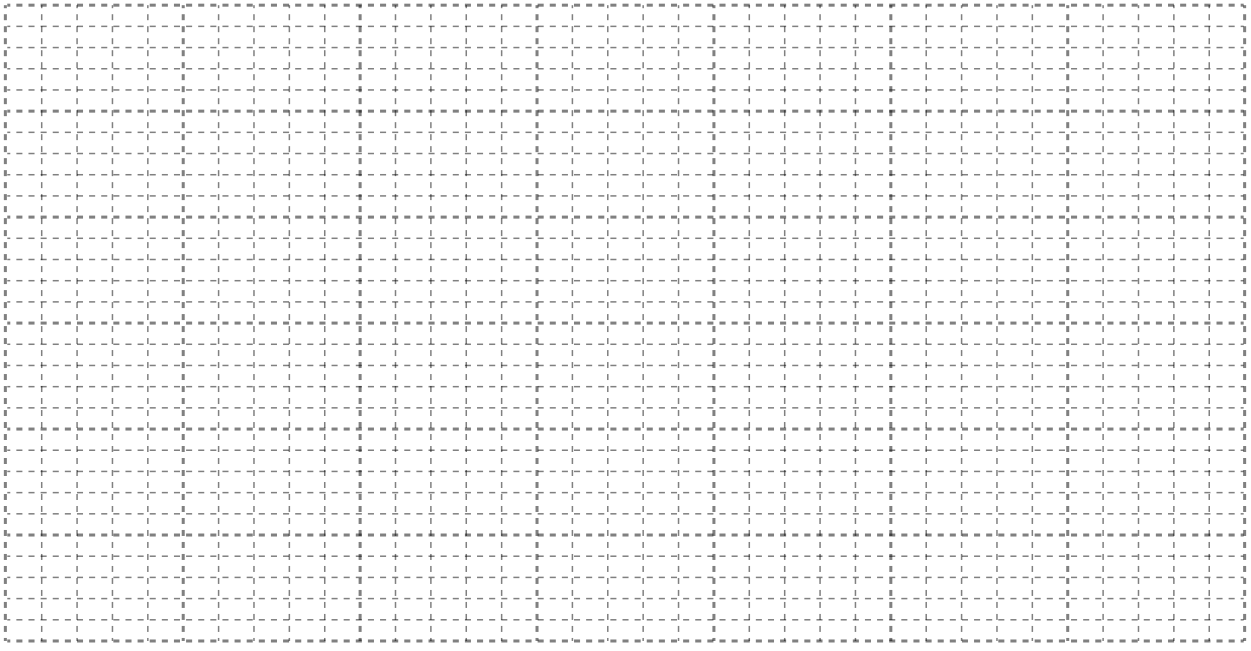
7. A child is playing with a toy car, and it accelerates to the south from 1.2 m/s to 6.3 m/s. If the toy car's acceleration is 2.75 m/s^2, what is the amount of time that the child takes to accelerate the car? Show all your work.

child playing with toy car on play mat

8. The information in the following data table represents an object that is rolling down a hill for 12.0 s.

Time (s)	Velocity (m/s) [down]
0.0	0.45
2.0	0.90
4.0	1.80
6.0	2.70
8.0	3.60
10.0	4.50
12.0	5.40

(5) a. Draw a velocity-time graph for the data shown in the table.



(2) b. What is the acceleration of the object? Show all your work.

(2) c. What displacement did the object undergo in the time interval between t = 2.0 s and t = 8.0 s? Show all your work he acceleration of the object? Show all your work.

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