

Quiz Review Sheet (MP)

Terms:

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|------------------------|-------------------------|------------------|
| 1. SI prefixes | 7. defined value | 13. scalar |
| 2. base unit | 8. speed | 14. vector |
| 3. derived unit | 9. distance | 15. displacement |
| 4. scientific notation | 10. uniform motion | 16. velocity |
| 5. significant figures | 11. distance-time graph | |
| 6. counted value | 12. slope | |

Matching Terms Review

Match the above terms to the statements below. Not all terms will be used. No term is used twice.

- (a) The distance traveled in a given amount of time.
- (b) The change in displacement in a given amount of time.
- (c) A SI unit that is obtained by placing a prefix upon the base unit.
- (d) Motion which involves constant speed (no acceleration).
- (e) A means of communicating the accuracy of a measurement based upon the number of digits in a value.
- (f) A means of communicating a value; particularly useful when the value is an extremely large or extremely small value.
- (g) A plot which shows a straight line for uniform motion.
- (h) The product of "speed multiplied by time".
- (i) A quantity which has a magnitude and unit, but no direction.
- (j) The straight line measurement (including direction) from an object's starting position to its final position.
- (k) This is a measurement of an object's speed using a distance-time graph.

Questions to Answer

- Convert each given amount to the amount in the wanted unit.
 - (a) 8395m to km
 - (b) 45.33cm to mm
 - (c) 2.33km to m
 - (d) 3.50min to s
 - (e) 3min 50s to seconds only
 - (f) 234s to min
 - (g) 2.3h to s
 - (h) 5344s to h
 - (i) 55km/h to m/s
 - (j) 4.5m/s to km/h
- State each value as scientific notation.
 - (a) 0.0046
 - (b) 4002
 - (c) 0.00000056
 - (d) 0.033
 - (e) 987654
 - (f) 33
- State each value as decimal form.
 - (a) 4.6×10^{-3}
 - (b) 3.3×10^2
 - (c) 1.66×10^4
 - (d) 8.4×10^{-2}
- Count the number of significant figures in each value.
 - (a) 0.03020m
 - (b) 2.00×10^{-4} m
 - (c) 5.50 seconds
 - (d) 1.0×10^4 m
 - (e) 0.0060km
 - (f) 3400s
- Round each value to the number of significant figures stated.
 - (a) 3.42km to 2 significant figures
 - (b) 3.45km to 2 significant figures
 - (c) 8.94cm to 1 significant figure
 - (d) 4.002cm to 3 significant figures
 - (e) 586m to 2 significant figures
- Complete each calculation, quoting the final answer with correct units and significant figures.
 - (a) $4.08 \text{ cm} - 2.3 \text{ cm}$
 - (b) $6.73 \text{ km} + 2 \text{ km}$
 - (c) $(24 \text{ m/s}) \times (3.30\text{s})$
 - (d) $145.1 \text{ km} / 1.55 \text{ h}$
- What is the speed of a motorcycle, in "km/h", which travels 65km in 45min?
- What is the distance travelled by a bus which has an average speed of 96.0km/h for 1.50h?
- What time will it take to drive to Clarendville to St.John's (189km) at an average speed of 102km/h?
- The following data were obtained for Jack and George on their race bikes: Jack travelled 24.5km in 42 minutes, while George travelled 26.2km in 33 minutes.
 - (a) Convert the time travelled for each cyclist into hours.
 - (b) Calculate the average speed of each cyclist in km/h.
 - (c) (i) At his speed above, how long would it take Jack to travel 33.4km?
(ii) Convert the above time (in (i)) from a decimal value to "hours and minutes"
 - (d) Calculate the distance George can travel in 1 hour and 30 minutes.
 - (e) How many *seconds* would it take Jack to travel 50.0km?

11. The following data were measured for a rollerblader at Bowring Park

time (s)	distance (m)
0.0	0.0
2.0	9.8
4.0	19.2
6.0	29.3
8.0	38.6
10.0	48.5

- (a) Plot a fully labeled distance-time graph for the data, using a line of best fit.
- (b) Is the rollerblader moving with uniform motion? Briefly explain your choice.
- (c) Using your graph, what is the distance travelled by the rollerblader in: (i) 5 seconds; (ii) 9 seconds
- (d) Using your graph, determine the average speed of the rollerblader. Include the units in your answer.
- (e) What is the average speed of the rollerblader converted to "km/h"?
- (f) At this average speed, how long would it take the rollerblader to travel the approximate length of the park, which is 4.8km?

12. A toy train is moving with uniform motion at an average speed of 0.15m/s for 30.0 seconds around a circular-shaped track which has a total length of 4.5m.

- (a) What distance is travelled during this time?
- (b) How many times around the track has the train gone during this time?
- (c) What is the displacement of the train when it goes around the whole track once? *Briefly explain* your response.
- (d) Consider your answers to (a) and (c). Should your answers be equal? *Briefly explain* your choice.

13. A wagon travels 72m[E] in 12s. They stop, turn, and immediately travel 125m[W] in 17s. What is the wagon's:

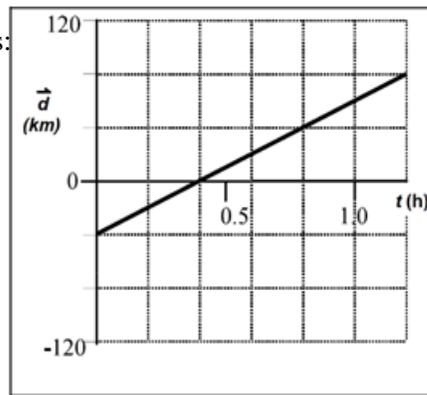
- (a) total distance travelled? (b) displacement? (c) average speed? (d) average velocity?

14. A ball runs along a track at a track at 105cm/s to the right for 8.20s. It then bounces off a wall and rebounds, moving 103cm/s to the left for 4.80s. What is the ball's:

- (a) total distance travelled? (b) displacement? (c) average speed? (d) average velocity

15. Use the position-time graph at right to answer these questions:

- (a) What is the starting position of the object?
- (b) What is the final position of the object?
- (c) What is the velocity of the object at $t = 0.60$ h?
- (d) Describe the motion of the object.



16. Use the position-time graph at the right to answer the questions:

- (a) What is the starting position of the object?
- (b) What is the final position of the object?
- (c) What is the velocity of the object at $t = 1.0$ s?
- (e) What is the velocity of the object at $t = 3.0$ s?
- (e) What is the velocity of the object at $t = 5.0$ s?
- (f) Describe the motion of the object.

