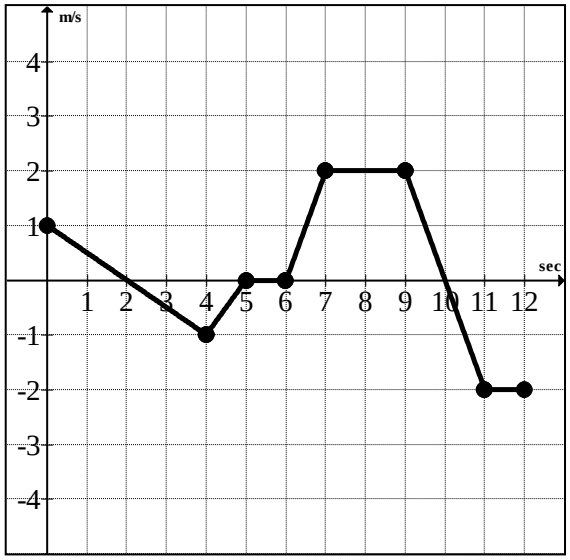
Calculus HW 34: Unit 3.7 Quiz Review ***Name:*** _____

1.



1. The following graphs show the velocity of a particle moving along a horizontal line. Answer the following questions for each graph:

a. When does the particle move forward?

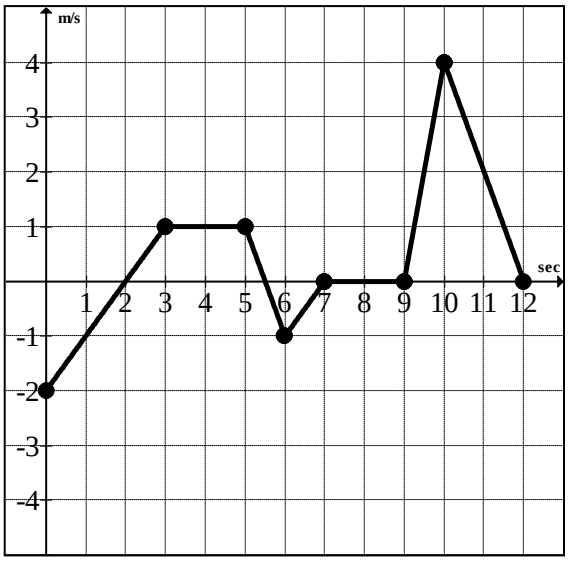
b. When does the particle move backward?

c. When does the particle speed up?

d. When is the particle standing still?

e. What is the particle's greatest velocity?

2.



2. The following graphs show the velocity of a particle moving along a horizontal line. Answer the following questions for each graph:

a. When does the particle move forward?

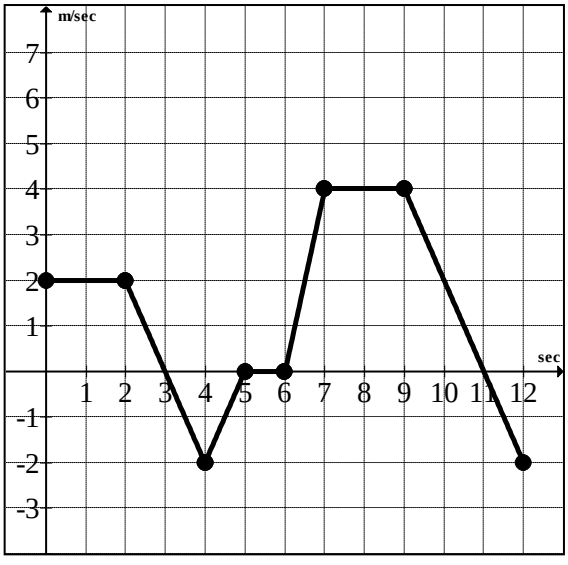
b. When does the particle move backward?

c. When does the particle speed up?

d. When is the particle standing still?

e. What is the particle's greatest velocity?

3.



3. The following graphs show the velocity of a particle moving along a horizontal line. Answer the following questions for each graph:

a. When does the particle move forward?

b. When does the particle move backward?

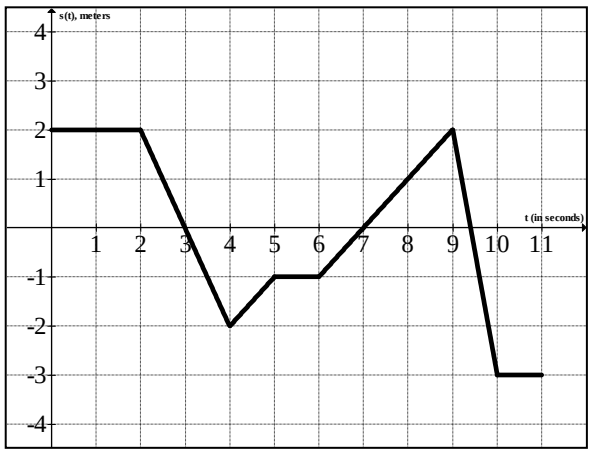
c. When does the particle speed up?

d. When is the particle standing still?

e. What is the particle's greatest velocity?

4. A particle moves along a line. The graph of its position is as follows:

s(t), m



t(secs)

a. When is the particle moving left?

b. When is the particle moving right?

c. When is the particle standing still?

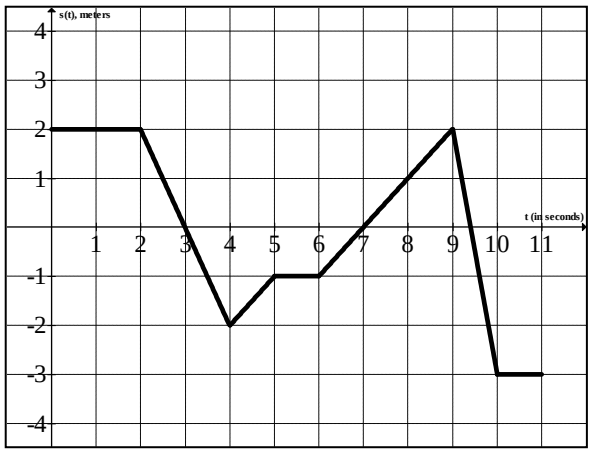
d. What is the displacement from start to finish?

e. What is the particle's greatest speed?

f. When does the particle reverse direction?

5. The following graph shows the velocity of a particle moving along a line.

v(t), m/s



t(sec)

a. When is the particle moving backward?

b. When is the particle moving forward?

c. When is the particle standing still?

d. When is the particle slowing down?

e. When is the particle speeding up?

f. What is the particle's greatest speed?

g. When does the particle change direction?

6. A particle moves along a line so that its position is given by the function $s(t) = t^2 - 7t + 12$, where *s* is measured in meters and *t* is measured in seconds.

a. When does the particle change direction? _____

b. Where is the particle when *s* is a minimum? _____

c. Find the displacement during the first 3 seconds? _____

d. Find the average velocity during the first 3 seconds. _____

e. Find the instantaneous velocity at *t=2*. _____

f. Find the acceleration of the particle at *t=2*. _____

7. A position of an object is modeled by the equation $s(t) = \frac{1}{3}t^3 - \frac{9}{2}t^2 + 18t - 24$, where *s* is measured in meters and *t* in seconds.

a. Find the displacement during the first 3 seconds. _____

b. Find the average velocity after 3 seconds. _____

c. Write an expression for the velocity. _____

d. Write an expression for the acceleration. _____

e. Find the acceleration when the velocity is zero. _____

f. Find the speed when the acceleration is zero. _____

g. Find the position when velocity is zero. _____

h. When does the object change direction? _____

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