April 16, 2018

1) answers side 2 #1-9

2) Motion Review WS

Test moved to Wednesday!!

Velocity-Time Practice (side 2)

1. Instantaneous velocity @ 14.5s
   2.5m/s

2. Distance in 1st 5s.
   Distance is area under the graph
   Area of trapezoid = $\frac{1}{2}$ b(h$_1$+th$_2$)

   $\frac{1}{2}$ 5(2 + 8 ~~9~~)

   $\frac{1}{2}$ 5(~~19~~)

   27.5m

3. During what time was acceleration opposite direction of motion?
   0s-5s , 6s-8s, 12s-15s,

4. Calculate the displacement between 6 and 12s
   Displacement = top area − bottom area

   Bottom area = $\frac{1}{2}$vt   Top Area = $\frac{1}{2}$vt
   (6s-12s)   (6s-12s)

        = $\frac{1}{2}$(2)(4)   = $\frac{1}{2}$(8)(4)

        = 4m   = 16m

   Displacement = 16m − 4m
                    = 12m

5. Average Speed between 6s - 12s

$V_{sp} = \frac{d}{t}$

distance = top area + bottom area

$= 16m + 4m$

$= 20m$

$V_{sp} = \frac{d}{t} = \frac{20}{6} = 3.33 \, m/s$

6. Total Distance during the 20s

distance = top area + bottom area

Top Area

$16m + \frac{1}{2} b(h_1, h_2) \quad + \quad bh$

$\qquad\qquad\qquad\qquad\qquad (5)(2)$

$\qquad \frac{1}{2} 3(8+2) \qquad\qquad 10m$

$\qquad \frac{1}{2} 3(10)$

$\qquad\qquad 15m$

Total top area = 41m

Bottom Area

$27.5m + \frac{bh}{2} \quad + \quad \frac{bh}{2} \quad + \quad \frac{bh}{(1)(2)}$

$\qquad\qquad + \frac{(1)(2)}{2} \quad \frac{(2)(4)}{2} \qquad \frac{2}{}$

$\qquad\qquad\quad 1m \qquad\qquad 4m$

Total Bottom = 34.5m

Distance = top + bottom
= 41 + 34.5
= 75.5

7. Position @ 20s mark

Position = top area - bottom area

$\qquad = 41m - 34.5m$

$\qquad = 6.5m$

8. Average speed and velocity for 20s

$V_{sp} = \frac{d}{t} = \frac{75.5}{20} = 3.78 \, m/s$

$\vec{V}_{avg} = \frac{\vec{d}}{t} = \frac{6.5}{20} = 0.325 \, m/s$

9. Assume the object started at (0,0), estimate what point it has instantaneously returned to starting position

16s

Acceleration Review

What is acceleration?

Constant acceleration vs constant speed

Examples of when instantaneous velocity can be 0, and acceleration is not 0.

Examples of when an object can have a constant speed and be accelerating.

Acceleration Word Problems

Velocity vs Time Graphs

Motion Review/ Graphing WS

(We will be working on this today as well as tomorrow. Answers will be posted on my teacher page, I also have a paper copy for you to check as you are working)

Test is Wednesday no matter what happens with school tomorrow!!!