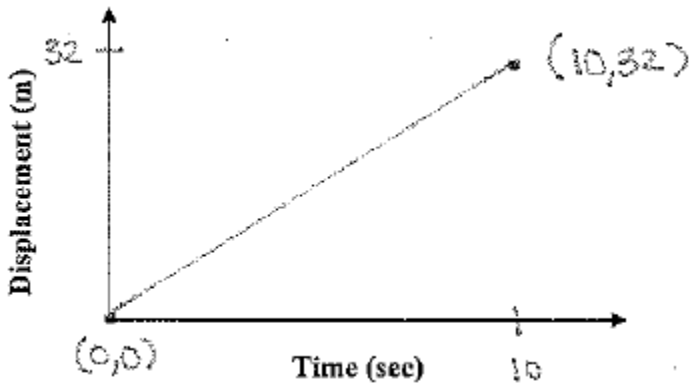
Name: _____ *Period:* _____

PRACTICE #1: DISPLACEMENT V. TIME GRAPHS ANSWER KEY

Part I:

2.



3. $m = slope = \frac{y_2 - y_1}{x_2 - x_1} = \frac{(32-0)\text{m}}{(10-0)\text{s}} = \mathbf{3.2\ ^{m}/_{s}}$

**The slope of the displacement-time graph determines the value of the* __velocity__ *of the object.*

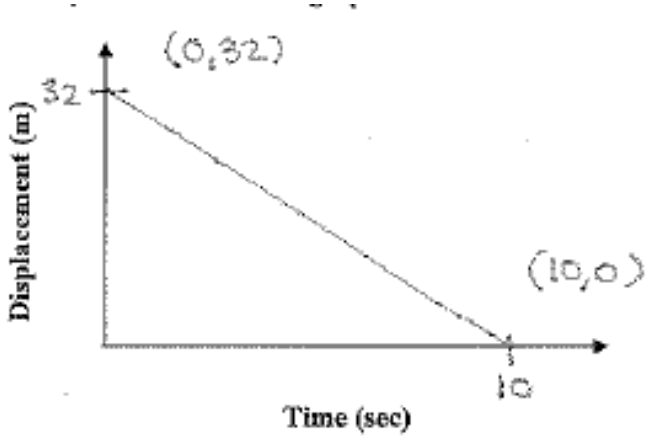
4. $d = (3.2\ ^{\text{m}}/_{\text{s}})t + 0$

5. $d = (3.2\ ^{\text{m}}/_{\text{s}})(16\text{s}) + 0 \rightsquigarrow \boldsymbol{d = 51\text{m}}$

Part II:

1. *Starting at 32m and moving at a constant rate towards the pole to reach it in 10 seconds.*

2.



3. $m = slope = \frac{y_2 - y_1}{x_2 - x_1} = \frac{(0-32)\text{m}}{(10-0)\text{s}} = \mathbf{-3.2\ ^{m}/_{s}}$

4. $d = (-3.2\ ^{\text{m}}/_{\text{s}})t + 32\text{m}$

5. *The runners from Part I and Part II have the same speed*

6. *The runners from Part I and Part II have the same magnitude but opposite direction for their velocities.*

Part III:

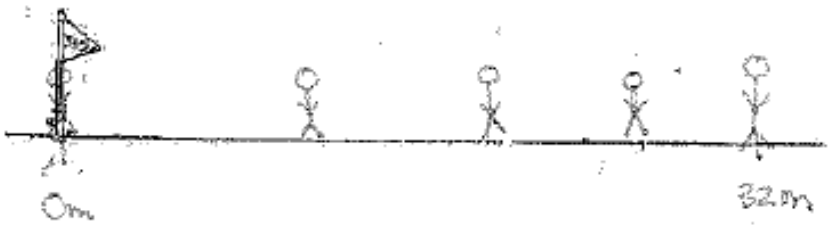
1. *Start at the flagpole and move away at an increasing rate for 10 seconds.*

2. 

3. *Start at 32 meters and move towards the pole at an increasing rate for 10 seconds.*

4. 

5. *Start at the flagpole and move awat at a decreasing rate for 10 seconds.*

6. 

7.