Section #1 – Basic Trig. Review

Useful Conversion Factors:
- 1 gal. = 3.79L
- 1 in = 2.54 cm
- 1 kg = 2.2lb
- 1 mile = 5280 ft
- $1.20 = 1$ British pound

1. An Olympic rower must weigh 155 lbs. or less to be eligible to row as a lightweight. How many kg’s is this?

2. How many meters are there in a 100 yard football field?

3. You are in Britain driving a fancy BMW that is low on gas. Since last fill-up you've driven 410 km. You put in 37.3 L of gas and you paid 8.7 pounds. How many miles/gal did the BMW get?

4. From the above problem, how many $/gal is the gas in Britain?

5. Florence Griffith-Joyner ran the 100meter dash in 10.49s in Indianapolis. What was her average velocity (mi/hr) for this sprint?

6. The NCAA champion Harvard Crew Team rowed the 2000 meter race at an average velocity of 5.6 m/sec. What was their time (in minutes and seconds)?

7. The position of a runner as a function of time is plotted as moving along the x axis of a coordinate system. During a 3 sec time interval, the runner’s position changes from x1 = 50m to x2 = 30.5m as shown above. What was the runner’s average velocity?

Questions 8, 9, and 10 refer to the following graph:

8. What is the horizontal displacement from S1 to S2?

9. What is the vertical displacement from S1 to S2?

10. What is the resultant displacement?
Answers
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1. 70.45 kg
2. 91.44 m
3. 25.9 mi/gal
4. $1.06
5. 21.3 mi/hr
6. 5 min 57 sec
7. –6.5 m/sec The negative sign indicates that the runner is moving left along the x axis.
8. 4 units to the right
9. 2 units up
10. 4.47 units