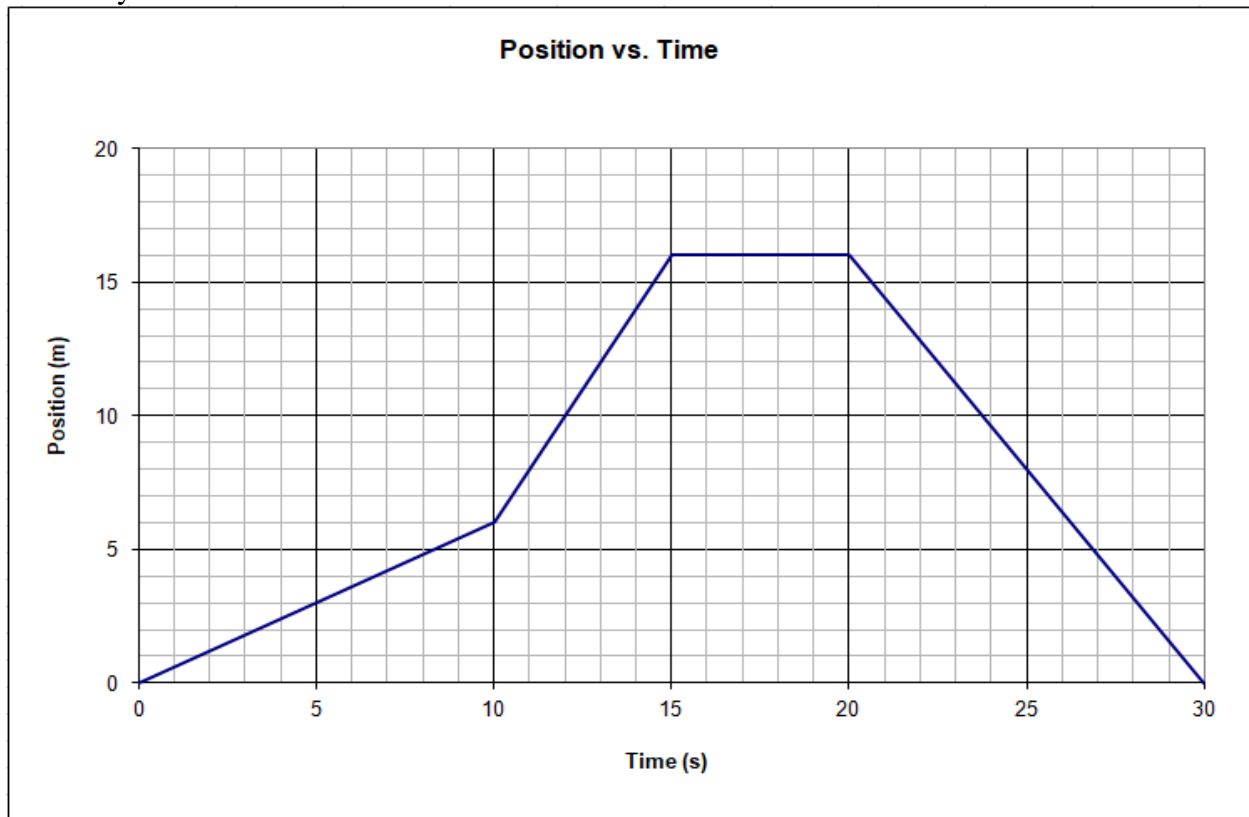


Name \_\_\_\_\_

**Graphs of Motion - Answer the questions below it, and show any calculations you made. Don't freak out if you don't get my exact answer – you should be within 0.1 or 0.2 of the right answer.**

1. The position of a car is shown on the graph below. Answer the questions below it, and show any calculations you made.



**This is a position question – you can just read the graph**

a) What is the car's position at 15 seconds? 25 seconds? How about 6 s? 26 s?

b) At what time(s) is the car at 8 m? 16 m? 5 m?

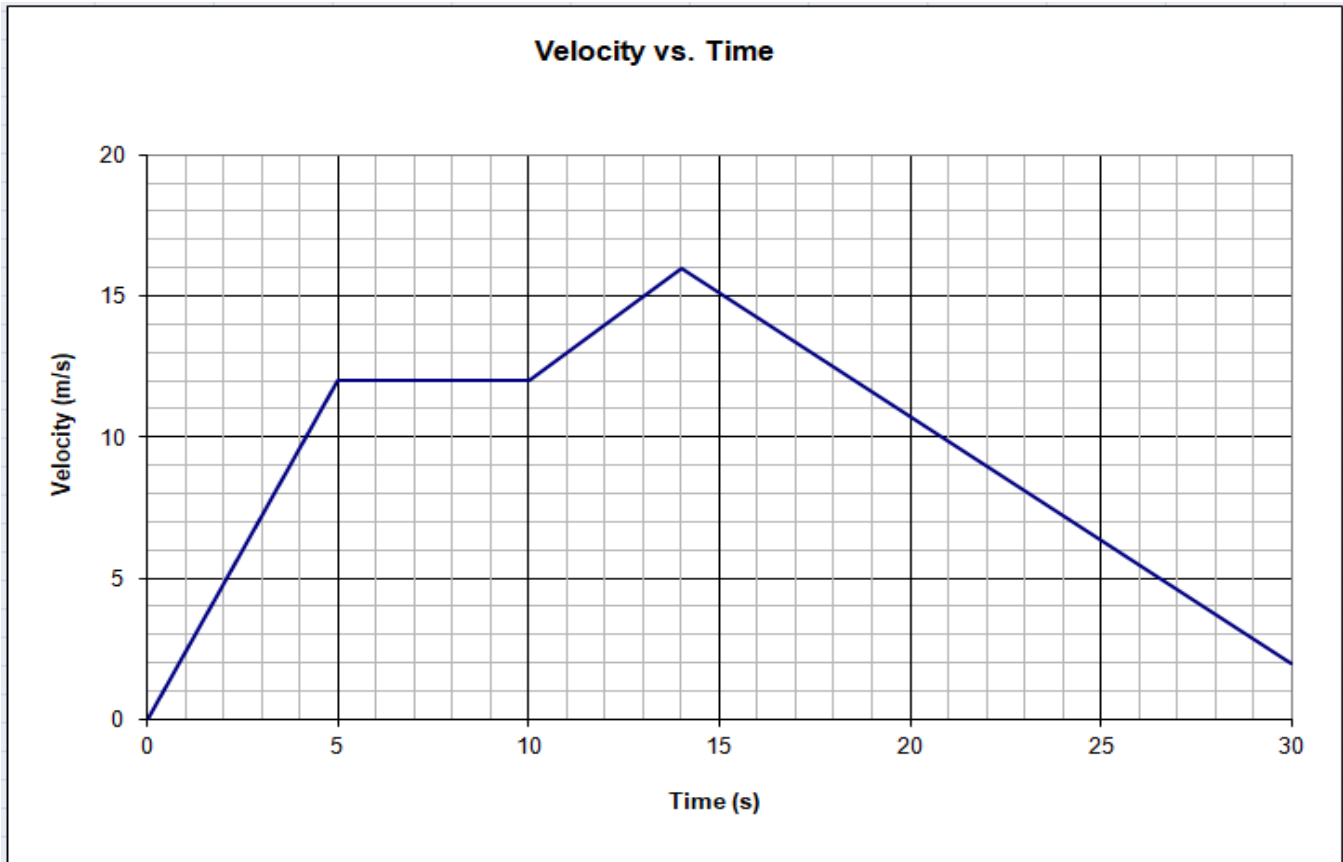
**The next few questions are about velocity. Velocity is slope on this kind of graph.**

c) What is the velocity at 5 seconds? (Use the whole line segment to find the slope – from 0 – 10 s)

d) What is the velocity at 12 seconds? at 17 seconds? At 25 seconds? (Use the whole line segment)

Answers: (a: 16 m, 8 m,  $\approx 3.6$  m,  $\approx 6.3$  m) (b: 11 s and 25 s, 15 s-20 s, 8.3 s and 26.9 s) (c: 0.60 m/s) (d: 2.0 m/s, 0.0 m/s, -1.6 m/s)

2. – This is a velocity vs. time graph for a different car.



**This is a velocity question – you can just read the graph.**

a) When is the velocity 12 m/s? What is the highest velocity it has? What is the velocity at 20.0 s?

**The next question is an acceleration question. Acceleration is the slope of a velocity graph.**

b) What is the acceleration at 3 seconds? at 6 seconds? at 12 seconds? at 25 seconds? Use the whole line segment to calculate the slopes.

**These are displacement questions. Displacement is the area under this kind of graph.**

c) What is the displacement of the car between 5 and 10 seconds?

d) What is the displacement of the car between 0 and 5 seconds?

e) What is the displacement for the whole graph? (0-30 s)

Answers: (a 5-10s and 18.6s, 16 m/s, 10.8 m/s) (b 2.4 m/s/s, 0, 1 m/s/s, -0.875 m/s/s) (c 60 m) (2d 30 m) (e 290 m)