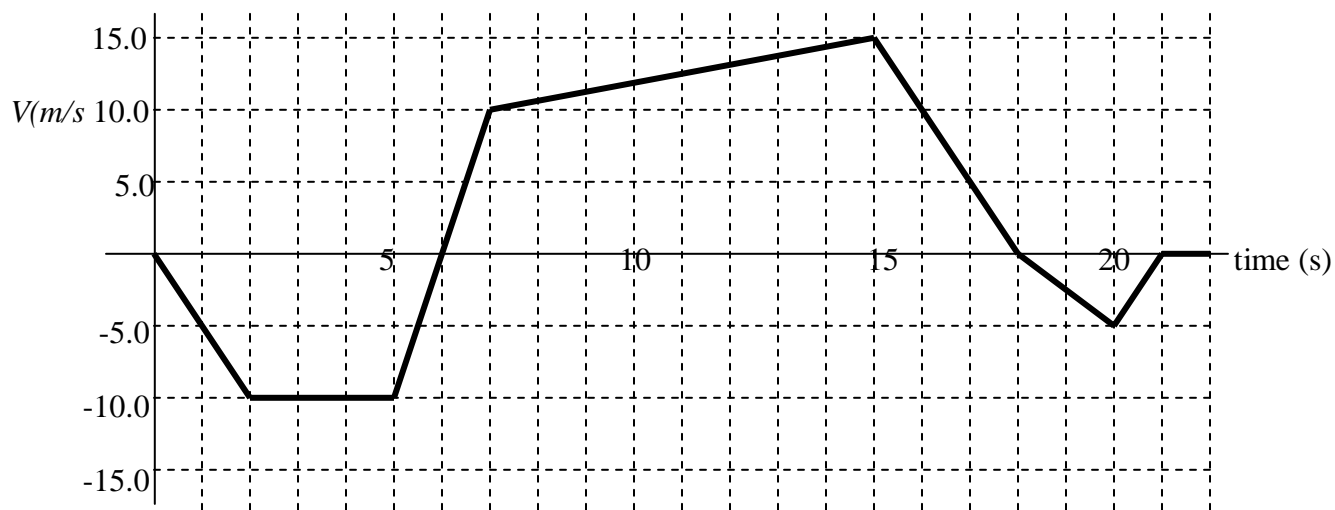


Name: \_\_\_\_\_ Date: \_\_\_\_\_

Motion Graphs & Kinematics Mini-Test Review: (ANSWERS ARE PROVIDED AT THE END OF THE REVIEW)

1. The graph below describes the motion of a fly.



a. Identify section(s) where the fly moves with constant velocity.

b. Identify section(s) where the fly moves right slowing down.

c. Identify section(s) where the fly moves left speeding up.

d. When is the fly at rest?

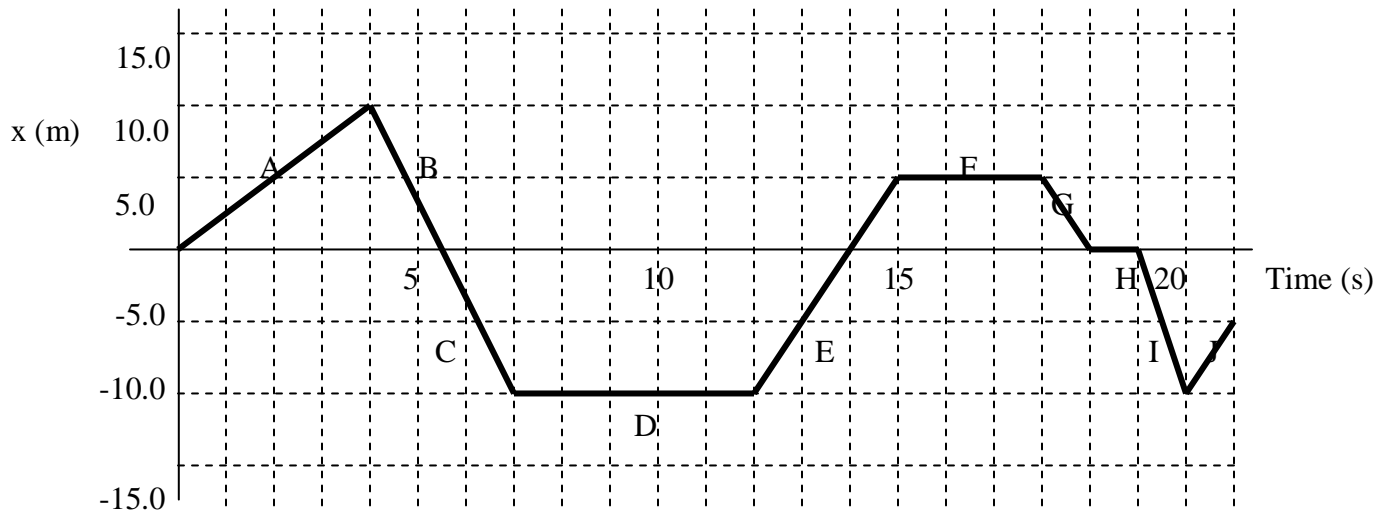
h. What is the average acceleration of the fly in this time interval?

i. What is the total displacement of the fly from 0 to 22 seconds?

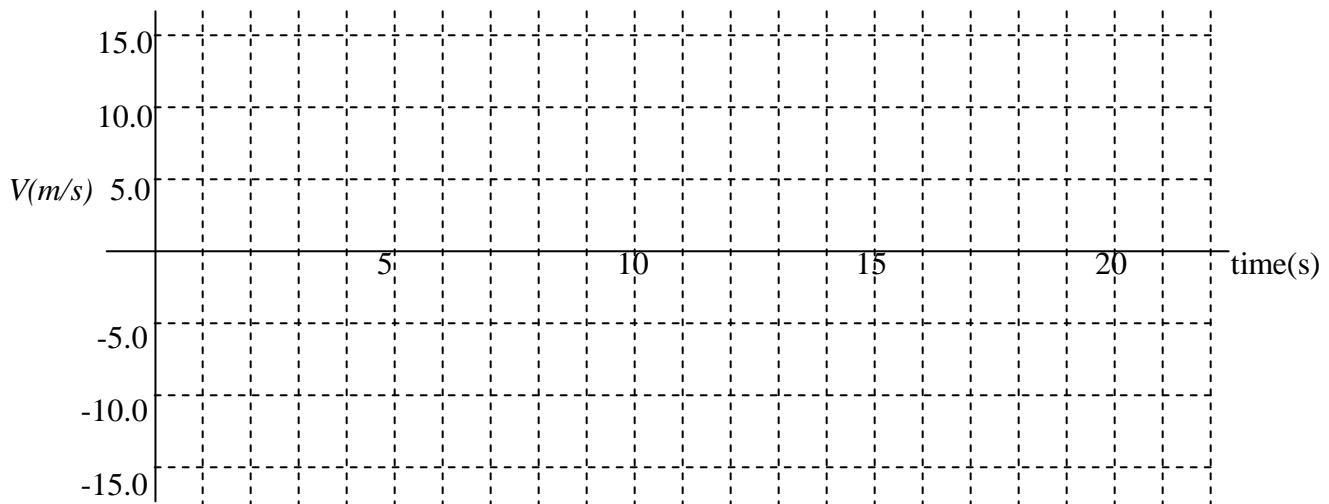
j. Identify the times when the fly changes direction.

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2. Little Joey plays with his remote control car, and generates the motion graph below. The car starts by moving eastwards.



- Identify section(s) where the car moves with constant velocity.
- Identify section(s) where the car moves west.
- Identify section(s) where the car speeds up.
- When is the car at rest?
- What is the average velocity of the car between 0 and 15 seconds?
- What is the total displacement of the car from 0 to 22 seconds?
- Draw a velocity vs. time graph describing the motion of the car.



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3. Parker walks 3.0 m south and then walks 6.0 m east. He reaches his destination in half a minute. Find Parker's displacement, distance moved, velocity and speed. (Draw diagrams where appropriate)

4. Cole drives to school from home, starting from rest and accelerating for 10 minutes as he travels 6.0 km to school.

a. What is Cole's acceleration?

b. What is his velocity when he reaches school?

5. As Nicholas enters the Jersey Turnpike he accelerates on the ramp, speeding up from 25 m/s to 55 m/s with a steady acceleration of  $3.0 \text{ m/s}^2$ .

a. How long does it take Nicholas to reach his final speed?

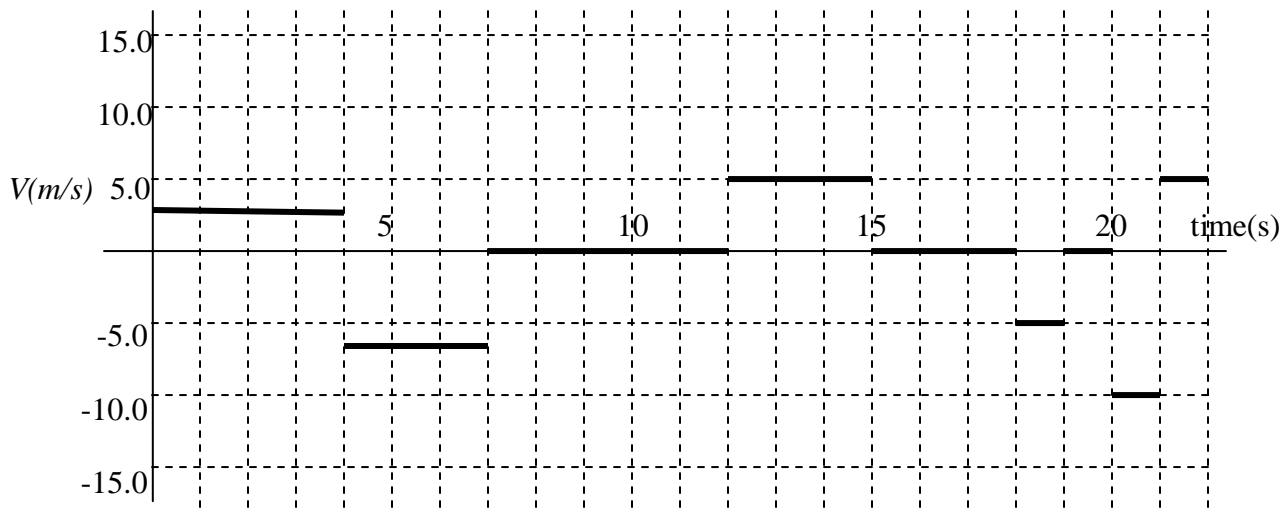
Name: \_\_\_\_\_ Date: \_\_\_\_\_

b. How far does he travel while he accelerates?

**Answers:** 1.a 2-5s, 1b: 15-18 s, 1c: 0-2s, 18-20s, 1d. 21-22 s 1 e.  $1\text{m/s}^2$  1f. 75 m, 1g. 6s, 18s

2 a. A, B, C, E, G, I, J 2b. B,C,I,G 2c. NONE 2d. H, 2e. 0.33 m/s

2f. -1.0 m 2g. See below



3. 6.71 m Southeast, 9.0 m, 0.22 m/s South east, 0.3 m/s .

4.  $0.033\text{ m/s}^2$ , 19.8 m/s

5. 10 s, 400.0 m