

CHAPTER 8**Problem Set: Speed****BLM 3-11**

Goal • Practise solving problems about speed. Be sure to show all your work.

1. Calculate the missing quantities in the table below.

v	d	t
	8.0 m	4.0 s
62.0 m/s		0.1 s
50.0 m/s	25.0 m	

2. A cyclist travels along a straight road at a constant speed of 11.0 m/s. How far will she travel in one hour?
3. An airplane leaves Vancouver and lands in Toronto, a distance of approximately 4100 km, four hours and fifteen minutes later. What was the average speed of the plane?
4. Assuming an average speed of 900 km/h, an airplane has enough fuel to fly for 8.5 h. How far will the airplane fly in this time?
5. The circumference of Earth at the equator is approximately 40 000 km. A supersonic jet can fly at an average speed of 1500 km/h. How long will it take the aircraft to travel around the equator, assuming it has enough fuel?

3. 7 km
4. 3.9 m[E]
5. 4.0 m/s[W]

BLM 3-11 Problem Set: Speed

1. $v = 2.0 \text{ m/s}$; $d = 6.2 \text{ m}$; $t = 0.5 \text{ s}$
2. $d = 39\,600 \text{ m} = 39.6 \text{ km}$
3. $v = 965 \text{ km/h}$
4. $d = 7650 \text{ km}$
5. $t = 26.7 \text{ h}$

BLM 3-14, Chapter 8 Quiz

1. B
2. C
3. D
4. A
5. C
6. D
7. B
8. D
9. B
10. B
11. C
12. D
13. A
14. B
15. G
16. E
17. (a) 9.0 m/s [forward]
(b) 90 s
(c) 450 m [N]
18. (a) 20 m/s [N]
(b) 10 m/s [N]
(c) 30 m/s [S]
19. The elevator is initially 3.0 m up and then rises, with uniform motion, to a position 6.0 m up during the first 10 s. The elevator then remains stationary at 6.0 m up for the next 10 s and then travels, with uniform motion, 6.0 m down to the origin during the last 10 s.

BLM 3-17, Problem Set: Acceleration

1. $\vec{a} = 4.7 \text{ m/s}^2$ [W]
2. $\vec{a} = -5.0 \text{ km/h/s}$ [S] or 5.0 km/h/s [N]
3. (a) $\vec{v} = 0.5 \text{ m/s}$
(b) $\vec{v} = 6.0 \text{ m/s}$
(c) $\vec{a} = 0.04 \text{ m/s}^2$
4. (a) $\vec{v} = 8.5 \text{ m/s}$ [E]
(b) $d = 24 \text{ m}$ [E]