2.2 Quizlette – Acceleration **Name**_____

Acceleration

1. A Leaf gains 24 m/s of speed in 3.2 s. What is its acceleration?

2. A 2014 RAV4 accelerates at 4.5 m/s/s for 5.0 s. What is the change in velocity?

3. A car going 26.82 m/s can decelerate at -8.8 m/s/s. In what time can it stop?

4. An oil tanker going at its top speed of 8.3 m/s will coast to a stop in 20 minutes (1200 s).
What is the deceleration in m/s/s?

5. A pitching machine accelerates a baseball from rest at 108 m/s/s for 0.37 s.
What is the final velocity of the baseball?

6. An Audi can accelerate at 9.72 m/s/s. What time will it take to go from rest to 26.82 m/s? (60 mph)

$V_f = V_i + at$ (Put the numbers in the formula in the parenthesis below the formula)

7. A car going 25 m/s accelerates at 3.2 m/s/s for 4.1 seconds. What is its final velocity?

V_f = V_i + (a)(t)

1) 7.5 m/s/s, 2) 22.5 m/s, 3) 3.05 s, 4) -0.00692 m/s/s, 5) 40 m/s, 6) 2.76 s, 7) 38.12 m/s, 8) 7.512 m/s

8. A freighter going 10.2 m/s reverses its screws and decelerates at -0.024 m/s/s for 112 seconds.
What is its final velocity?

V_f = V_i + (a)(t)

9. A Leaf can accelerate at 4.2 m/s/s. What time will it take to accelerate from 8.0 m/s to 32 m/s?

V_f = V_i + (a)(t)

10. An oil tanker can decelerate at -0.00694 m/s/s by coasting.
What time will it take to decelerate from 8.3 m/s to 2.4 m/s?

V_f = V_i + (a)(t)

11. A car speeds up from 12 m/s to 37 m/s in 3.5 s. What is the acceleration?

V_f = V_i + (a)(t)

12. A bicycle slows down from 20.2 m/s to 5.7 m/s in 12 s. What is the acceleration? (deceleration...)

V_f = V_i + (a)(t)

13. A car accelerates at 2.3 m/s/s for 4.3 s at the end of which it is going 38 m/s.
What was its initial velocity?

V_f = V_i + (a)(t)

14. A cop clocks a car going 17 m/s after having decelerated at -6.3 m/s/s for 2.5 s.
What was the initial velocity of the car?

V_f = V_i + (a)(t)

9) 5.71 s, 10) 850 s, 11) 7.14 m/s/s, 12) -1.21 m/s/s, 13) 28.1 m/s, 14) 32.75 m/s