Answer key to chapter 1 and 2 review IPC

1. F times a
2. T2 plus T1
3. m times v
4. ΔD divided by ΔT
    1. a = 43 m/s2
    2. S or v = 3 meters/ sec
    3. D = 45 meters
    4. F = 22 newtons
    5. T = 80 sec
    6. S = ΔD / ΔT
        ΔD = SΔT

        a = ΔS/ΔT
        ΔS= aΔT
        ΔT= ΔS/a

        A car travels 10 m/s for 5 secs. Calculate how far it traveled.
        Variables: 10 m/s, 5 sec
        Formula: S = ΔD / ΔT
        Solution: 50 m

        You travel from Maine (100 miles away) to Vermont (300 miles away), in 4 hours. Calculate your
speed.

Variables: D1= 100 miles, D2= 300 miles, T=4 hours

        Formula: S = ΔD / ΔT and ΔD= D2 – D1

        Solution: 50 mph

A bike goes 12 m/s for 6 seconds. Calculate how far the bike traveled.

Variables: 12 m/s, 6 seconds

        Formula: a = ΔS/ΔT
        Solution: 2 m/s2

You're meeting a friend at 6pm. She lives 180 miles away. The speed limit is 60 mph. When do you
need to leave?

Variables: T2=6pm, ΔD = 180 miles, S = 60mph

Solution= 3pm

1. C
2. D
3. A
4. E

5. B
6. Control
7. Experimental
8. Control
9. Experimental
10. Experimental
11. Control
12. Control

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1. D
2. C
3. A
4. E
5. F
6. B
   At rest A, C
   Fast B
   Slow D
   Backward D
   Forward B

Independent variable: time (sec)

Dependent variable: position

14 m

Rise/run= 4m/s

Slope stands for speed m/s

A person starts running from 3 m/s to 9 m/s in 2 seconds. Calculate the person's acceleration

Variables: S2= 9m/s, S1= 3m/s, T= 2 sec

Formula: ΔS/T

Solve: 3 m/s2

A plane stops from 300 mph in 15 seconds. Calculate the plane's acceleration

Variables: S1 = 0, S2= 300 mph, 15 seconds

Formula: a = ΔS/T

Solve: 20 m/s2

Speed or velocity:

1. Speed
2. Speed
3. Velocity
   Scalar or vector
   1. S
   2. V
   3. V

Speed vs. time graph

1. Constant speed B, D
2. Deceleration C
3. Acceleration A