

Physics 11 U1 - Kinematics Worksheet 4 – Four Equations

Name: _____

Date: _____

| | |
|--|-------|
| | no |
| $V_f = V_i + at$ | d |
| $d = V_i t + \frac{1}{2} at^2$ | V_f |
| $V_f^2 = V_i^2 + 2ad$ | t |
| $d = \left(\frac{V_i + V_f}{a}\right) t$ | a |

1. A runner accelerates from 2 m/s to 8 m/s at a rate of 4m/s^2 . How much distance does the runner cover while accelerating?

distance: _____

2. A truck parked on a slope slips its parking brake and accelerates downhill at 2m/s^2 . How fast is the truck going after 6 seconds?

velocity: _____

3. A car travelling initially at 3 m/s accelerates at 3.5 m/s^2 for 6 seconds. How much distance does it cover?

4. A runner initially travelling at 4 m/s accelerates to 7 m/s during a 4 second run. How far did the runner travel?

5. A car travelling at 120 km/hr can brake at 6.8 m/s^2 on dry pavement. If the reaction time of the driver is 0.9 seconds, what is the total distance needed to stop?