



The Big 5!

$$\vec{v}_2 = \vec{v}_1 + \vec{a}t$$

$$\vec{d} = \vec{v}_1 t + 1/2 \vec{a}t^2$$

$$\vec{v}_2^2 = \vec{v}_1^2 + 2\vec{a}\vec{d}$$

$$\vec{d} = \frac{\vec{v}_1 + \vec{v}_2}{2} t$$

$$\vec{d} = \vec{v}_2 t - 1/2 \vec{a}t^2$$

1. A slingshot fires a rock from rest to 80 km/hr in 0.010 s. What is the acceleration of the rock?
2. An object accelerates at -9.80 m/s/s when falling. How long does it take an object to change its velocity from -1.5 m/s to -9.4 m/s ?

3. A car travelling at +140 km/h accelerates at -2.3 m/s/s for 2.7 s. How far has it travelled in that time?

4. If a racecar travels at 225 km/hr, how far does it travel in 2.00 s?

5. Assuming no air resistance, how fast is a ball moving when it has fallen 25.0 m from rest?

