**Speed & Velocity**

Velocity = distance/time

What is the velocity of the following?

1. A Formula 1 car that travels 280 m in 4 s.
2. A cheetah that travels 250 m in 10 s.
3. A tortoise that travels 5 m in 1 minute.

How far does each of the following travel in 30 seconds?

1. A marathon runner travelling at 3 m/s.
2. A cyclist travelling at 5 m/s.
3. A drag racer travelling at an average of 60 m/s.

How long does it take for...

1. The marathon runner to travel 1 km?
2. The cyclist to travel 900 m?
3. The drag racer to travel 500 m?

a = (final- initial velocity)/time

**Velocity & Acceleration**

What is the acceleration of the following?

1. A cheetah accelerating from rest to 30 m/s in 5 s.
2. A car accelerating from rest to 20 m/s in 3 s.
3. An antelope accelerating from 5 m/s to 20 m/s in 4 s.

How fast will a car be travelling if it accelerates at 3 m/s2 for...

1. 1 s?
2. 3 s?
3. 10 s?

F = m x a

**Force, Mass & Acceleration**

How much force is required to...

1. Accelerate a 0.5 kg ball at 50 m/s2?
2. Accelerate a 100 kg cyclist at 1 m/s2?
3. Accelerate a 750 kg car at 5 m/s2?

How fast will the following objects accelerate?

1. A 0.5 kg ball hit with a force of 200 N.
2. A 100 kg cyclist exerting a driving force of 200 N.
3. A 1000 kg car with a driving force of 4000 N.

What is the mass of the following?

1. An object that accelerates at 4 m/s2 when a force of 3000 N is applied.
2. An object that accelerates at 10 m/s2 when a force of 100 N is applied.
3. An object that accelerates at 15 m/s2 when a force of 3500 N is applied.