Forces and motion revision

Linear motion

_____ = $\frac{distance}{time}$

_____ is the rate of change of distance. _____ in Physics means divide by time. The S.I. unit of speed is ____. _____ is a _____ quantity because it has only magnitude also called ____ and no _____.

_____ = $\frac{displacement}{time}$

_____ is the rate of change of displacement. _____ is a vector quantity since it has both _____ and direction. The S.I. unit of _____ is m/s.

Equations of motion

1. $= \frac{v-u}{t}$
2. $s = u + \frac{1}{2}a$ ²
3. $v^2 =$ ² + 2a

Questions on equations of motion

1. An object starts from rest and increases its velocity uniformly to 10 m/s in 5 seconds.
    a. u = _ m/s
    b. v = __ m/s
    c. a = _ m/s²
    d. s = __ m

2. An object is moving at 5 m/s. It accelerates uniformly at 2 m/s^2 for 3.2 seconds.
    a. u = _ m/s
    b. v = ____ m/s
    c. s = _____ m
3. An object is moving at 2 m/s. It accelerates uniformly to 4 m/s and within this time it covers 15 m.
    a. a = ___ m/s^2
    b. t = ___ s

Graphs of motion

1. <u>Displacement – Time graph</u>
    a. The gradient = _____
    b. If the gradient is positive the object is moving _____ from the initial point. If the gradient is negative the object is moving _____ the initial point.
2. <u>Velocity – Time graph</u>
    a. The gradient = _____
    b. If the gradient is positive, the _____ is increasing. If the gradient is negative the _____ is _____, in other words, the object is _____.
    c. The _____ = displacement covered.