Write down the equations for the following quantities. For each give units and put into an equation triangle

Quantity	Equation	Equation Triangle
Speed		
Weight		
Hooke's Law		
Acceleration		
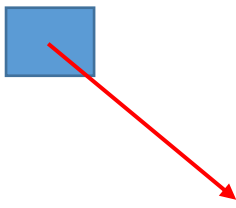
Describe the differences between scalars and vectors. Give examples in the table below.

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Scalars	Vectors

Draw a free body diagram to resolve the vector below.

What is a resultant force?

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Forces

Draw force diagrams to show the resultant force for the following scenarios.

Car Speeding up (accelerating)

Car going at a steady speed

Car slowing down (decelerating)

State the difference between a contact and non-contact force and give some examples in the table below.

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Contact	Non Contact

In the space below sketch a d-t graph to show an object:
- Travelling at a steady speed
- Stationary

In the space below sketch a Force – Extension graph to show Hooke's law:
- Show where the limit of proportionality is.

Identify the pattern of the graph

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State what the gradient shows on the Force Extension graph. Describe how you would measure energy stored in the spring using the graph.

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Forces

Write down the equations for the following quantities. For each give units and put into an equation triangle

Quantity	Equation	Equation Triangle
Work Done		
SUVAT		
Speed		
Acceleration		
Newton's second law		
Momentum		

State the factors that affect braking and thinking distance.

Breaking:

Thinking:

What is the conversation of momentum?

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In a collision show that the momentum is conserved.

Why is it important to increase the impact time in a collision?

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For an object that rebounds off a surface so that the change in momentum is double.

In the space below sketch a d-t graph to show an object:
- Travelling at a steady speed
- Stationary

In the space below sketch a v-t graph to show an object:
- Accelerating
- Travelling at a steady velocity
- Decelerating

Describe how you would measure the acceleration on a V-T graph

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Describe how you would measure the distance travelled on a V-T graph

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Describe in detail how the forces change for a falling object. Make reference to Newton's laws of motion

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