

Year 11 Physics 2021

Worksheet 1- Mechanics

1. Describe the scientific method of investigation with reference to simple examples.
2. Use a ruler to determine the perimeter and area of the following objects around you with the appropriate uncertainties:
 - a. Your Physics exercise book
 - b. A phone (assume it is a rectangle)
 - c. The top of a tin can.
3. Write down the metric prefixes for the following:
 - a. 10^{12}
 - b. 10^{-6}
 - c. 10^{-3}
4. Define the following and give two examples of each:
 - a. Scalar quantity
 - b. Vector quantity
5. Two people are pushing a disabled car. One exerts a force of 100 N east, the other a force of 250 N east. What is the net force exerted on the car? (Assume friction to be negligible.)



6. A mountain climbing expedition establishes a base camp and two intermediate camps, A and B. Camp A is 11,200 m east of and 3,200 m above base camp. Camp B is 8400 m east of and 1700 m higher than Camp A.
 - a. Draw a graphical representation of the camps.
 - b. Determine the displacement between base camp and Camp B.
7. Distinguish between dependent and independent variables. Give an example of each.
8. Name the three basic types of forces.
9. Describe what happens if you are riding a bicycle and suddenly you hit a rock with the front wheel.