

Year 11 Physics 2021 Worksheet 10

Write the answers in your Exercise Book.

1. A runner takes 4 minutes to jog 300 m east and then 400m towards North.
Calculate the
 - (a) total distance covered. **(1 mark)**
 - (b) final displacement. **(1 mark)**
 - (c) average velocity. **(1 mark)**
 - (d) average speed. **(1 mark)**

2. A spring which obeys Hooke's Law is extended by 20 mm by a force of 120 N. The energy stored in this stretched spring, in Joules is
 - A. 1.2
 - B. 2.4
 - C. 240
 - D. 1200 **(1 mark)**

3. An object of mass 20 kg is lifted through a vertical height of 5 m
 - (a) How much work is done against the earth's gravitational field? **(1 mark)**
 - (b) What is the gain in gravitational potential energy of the object? **(1 mark)**

4. An aircraft is moving along a runway at 6 m/s when it begins to accelerate at 10 m/s^2 for take-off. It takes 20 s to reach the take-off speed.
Calculate its take-off speed. **(1 mark)**