Tossed Ball   Key

A ball tossed upward has initial velocity components 30 m/s vertical, and 5 m/s horizontal. The position of the ball is shown at 1-second intervals. Air resistance is negligible, and $g = 10$ m/s². Fill in the boxes, writing in the values of velocity *components* ascending, and your calculated *resultant velocities* descending.

10 m/s

5 m/s

5 m/s

20 m/s

11.2 m/s

3

−10

Use the geometry theorem
$$c^2 = a^2 + b^2$$
to find the resultant velocities.

5 m/s

5

30 m/s

−20

20.6 m/s

More specifically,
$$v = \sqrt{V_x^2 + V_y^2}$$

5 m/s

30.4 m/s

conceptual PHYSICS