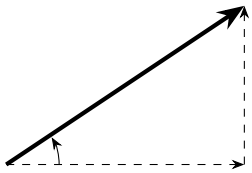
Post-Break Projectile Review

1. What two things must a *vector* have?

2. What are the most basic one-dimensional, two-dimensional, and three-dimensional shapes?

3. In the following diagram, label the *resultant* and the *x-component*, and the *y-component*.



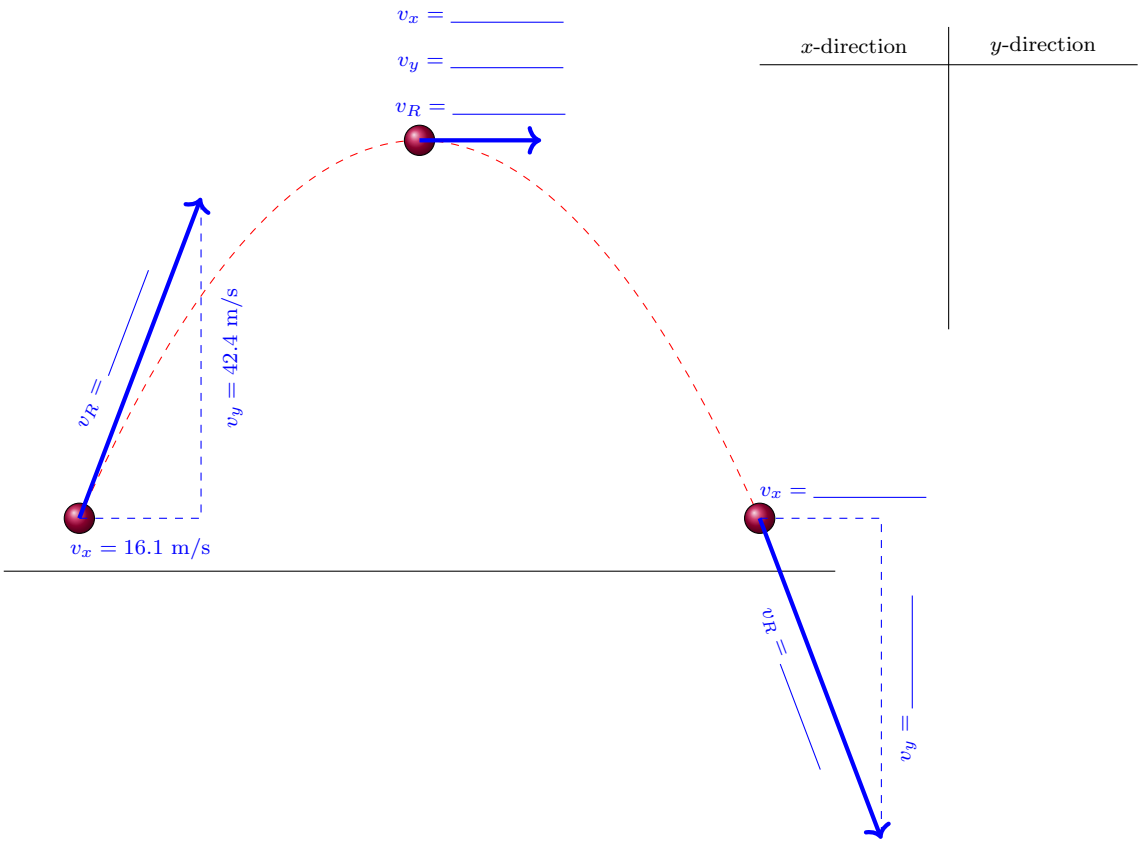
4. What happens to the x-component and y-component of a projectile's velocity over time?

5. Why does this cause the curved shape of the projectile?

6. For a given initial projectile speed, which angle gives the furthest range? Why is that?

Name: Date: Period:

7. Given a projectile with an initial x-velocity of 16.1 m/s and an intial y-velocity of 42.4 m/s, fill in the T-chart and answer the following questions:



x-direction	y-direction

(a) Calculate the **resultant initial velocity** and the **launch angle** of the projectile. And then label them in the diagram above.

(b) Calculate the **time** that the projectile was in the air.

(c) Calculate the total x**-displacement** of the projectile.