Name:_____

Draw a box around your final answers. No partial credit will be given.

1. Find $\dfrac{dy}{dx}$ if $x + 2y = 5$

2. Find $\dfrac{dy}{dx}$ if $x^2 + y^2 = 16$
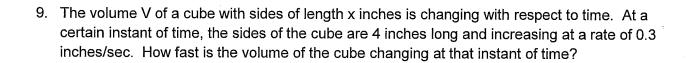
3. Find $\dfrac{dy}{dx}$ if $xy = 1$

4. Find $\dfrac{dy}{dx}$ if $x^3 - x^2 - xy = 4$

5. Find $\dfrac{dy}{dx}$ if $x^2 y^2 - xy = 8$

6. Find $\dfrac{dy}{dx}$ if $3x + 4y = 6$

7. Find $\dfrac{dy}{dx}$ if $x^2 - 2y^2 = 7$

8. Find $\dfrac{dy}{dx}$ if $x^3 + y^3 + y - 4 = 0$

9. The volume V of a cube with sides of length x inches is changing with respect to time. At a certain instant of time, the sides of the cube are 4 inches long and increasing at a rate of 0.3 inches/sec. How fast is the volume of the cube changing at that instant of time?

10. The base of a 17-ft ladder leaning against a wall begins to slide away from the wall. At the instant of time when the base is 8 ft from the wall, the base is moving at a rate of 8 ft/sec. How fast is the top of the ladder sliding down the wall at that instant of time?