

(C1-7.7) Name:

Homework Questions 7 - Rate of Change

For the rate of change of the following by differentiating

1. find $\frac{d\theta}{dt}$ where $\theta = t^3 - 4t + 6$

2. find $\frac{dx}{dy}$ where $x = 7y^2 - 3y + 2$

3. find $\frac{dr}{dt}$ where $r = 3t^2 - 2t + 1$

4. find $\frac{da}{dr}$ where $a = \pi r^2$

5. find $\frac{dt}{dy}$ where $t = y^2(y + 3)$

6. find $\frac{ds}{dt}$ where $s = 7t^2 - 6t$

7. find $\frac{da}{dx}$ where $a = 8x^3 - 2x^2 - 3$

8. find $\frac{dy}{dx}$ where $y = 5x^2 - \frac{1}{x^3} + x$

9. find $\frac{dy}{dx}$ where $y = (x - 4)(2 - 3x)$

10. find $\frac{d\theta}{dt}$ where $\theta = (t + 1)(t^2 - 4)$