

Math 188 Ch. 9 and 10 Test Name _____
 Show all your work if you want to receive credit.

- (1) Find the equation of a parabola with vertex at the origin and a directrix of $x = 5$.
- (2) Find the equation of an ellipse with eccentricity = 0.7 and foci $(-9, 0)$ and $(9, 0)$.
- (3) Simplify $\sqrt{(x + 4)^2 + y^2} - \sqrt{(x + 4)^2 + y^2} = 20$ So that it is the standard form of a hyperbola.
- (4) Find the n th term of the following
 - (a) $\frac{3}{4}, \frac{7}{16}, \frac{11}{64}, \square$
 - (b) $1, \frac{\square}{2}, 3, \frac{\square}{4}, 5, \frac{\square}{6}, \square$
- (5) Write 0.071071071... as a fraction in lowest terms.
- (6) A ball is dropped from a height of 20 feet. On each bounce, it returns to $\frac{3}{5}$ of its previous height. What is the total vertical distance traveled by the ball?
- (7) What is the monthly payment on a 30 year \$200,000 loan if the loan has a 7.8% annual interest rate, compounded monthly?
- (8) What is the coefficient of the x^2 term in the expansion of $\left(x^2 - \frac{3}{x}\right)^7$
- (9) If induction is covered in your course
 Prove $n^2 - n + 41$ is odd for all natural numbers n .