

Math 1113 Test 1
Fall 1999, Dr. Howard

Name: _____

Please show all work and justify your answers writing neatly and legibly.

1. Interval notation.

a. Express the interval $(-2, 1/3]$ as an inequality.

b. Express the inequality $3 \leq x < 7$ using interval notation.

2. Determine all values of x that satisfy each inequality.

a. $-2 < 2x + 9 < 5 + x$

b. $\frac{(x+3)(x-2)}{x-4} > 0$

c. $|x-3| \geq 2$

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3. Indicate on an xy -plane those points (x, y) for which $-1 \leq x \leq 2$ and $-2 \leq y < 3$.
4. Determine the center and radius of the circle $(x + 3)^2 + (y - 2)^2 = 4$.
5. Find the distance between the points $(1, 2)$ and $(4, 0)$.
6. Identify the type(s) of symmetry found in the graph of the equation $x^4y^2 + 2x^2y - 1 = 0$.

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7. Sketch the graph of the equation $y = \sqrt{x+4}$ by plotting points. Be sure to clearly label all points used.
8. Consider the function described by $f(x) = \sqrt{x+2}$ in responding to the following.
- What is the domain of the function?
 - What is the range of the function?
 - Find a formula for $f(x+3)$.
9. Find an equation of the line through the point $(2, 3)$ with slope $m = 2$.

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10. Find an equation of the line that is perpendicular to $y = 2 - x$ at the point $(1, 1)$.