

Homework 3 - Math 140

Name: _____

Due by 5:00pm Monday, March 8. Send a PDF with your solutions to blins@hsc.edu.

Suppose that $p(x) = x^2 - 8x + 12$.

1. What are the roots of $p(x)$?
2. What are the coordinates of the vertex of $p(x)$?

Solve the following inequalities.

3. $4x + 3 > 10x - 6$

4. $x^2 - 4x > 0$

5. $x^2 + 12x + 20 > 0$

6. $\frac{1}{x} > \frac{2}{5}$

7. $(x + 5)(x - 5)(x - 10) > 0$

8. $\frac{(x + 1)(x - 5)}{(x - 2)^2} > 0$

9. $\frac{x^2 - 4x + 3}{x - 2} \leq 0$

10. $\frac{x}{4 - x} \leq 1$

11. $|x - 4| \leq 3$

12. $|2x + 5| > 3$

13. Write the following sentence as an inequality using absolute values: *the distance from x to 5 is less than 2.*