

Name: _____

(20 points) Books, notes, and calculators are **not** allowed. *Show all your work and clearly indicate your answers.* Good Luck!

1. (2 pts) Given the number $-\sqrt{20}$, circle all of the following that describe the number.

real

rational

irrational

integer

natural

2. (3 pts) Sketch the graph represented by the following interval(s) or inequalities.

(a). $[-1, 5)$

(b). $x > 2$ or $x < 6$

Evaluate the following. Write any fractions in their most reduced form.

3. (1 pts) $|-3| - |-5|$

4. (1 pts) $\frac{1}{2} + \frac{4}{3}$

5. (1 pts) $2 \div \frac{3}{5}$

6. (2 pts) $\frac{1 + 2 \cdot 3^2}{3 - 2(-1)^2}$

7. (2 pts) Remove parentheses and simplify: $x - \frac{1}{2}[y + 3(y - 4)]$

8. (2 pts) Factor out any common factors in

$$4xy^2 + 8x^2y^2z + 2xy^2$$

Simplify the following. Use only positive exponents in your answers.

9. (1 pts) $a^{-2}a^5$

10. (2 pts) $\frac{(-2x)^3}{4x^4}$

11. (3 pts) $\left(\frac{x^2y^{-3}}{x^4}\right)^{-2}$