

Name: _____

This quiz is worth 66 points. There are 8 questions and you have 30 minutes to complete them. Attempt all questions and show all *neccessary* work. Do not just word vomit. If you get stuck and cannot answer a question, write down, using words, what you would *like* to do and you may receive partial credit. Any questions, just ask. Calculators are **not** allowed.

1. (8 points) Give an example of each of the following;

(a) A natural number

Answer: _____

(b) An integer that is not a natural number

Answer: _____

(c) A rational number that is not an integer

Answer: _____

(d) An irrational number

Answer: _____

2. (6 points) Evaluate the arithmetic expression: $-2 + \left[3 \cdot 6 - 5 \left(3 - \frac{1}{5} \right) \right]$

Answer: _____

3. (8 points) Expand the expression:

(a) $3(x + 7)$

Answer: _____

(b) $-3c(6ab - 5bd)$

Answer: _____

4. (6 points) Decide which symbol ($<$, $>$ or $=$) should go in the space

(a) 3 _____ $\frac{7}{2}$

(b) $\frac{2}{3}$ _____ 0.67

(c) 3.5 _____ $\frac{7}{2}$

5. (6 points) Find the indicated set if $A = \{1, 2, 3, 4, 5, 6, 7\}$, $B = \{2, 4, 6, 8\}$ and $C = \{7, 8, 9, 10\}$:

(a) $A \cup B$

Answer: _____

(b) $A \cap C$

Answer: _____

(c) $B \cup C$

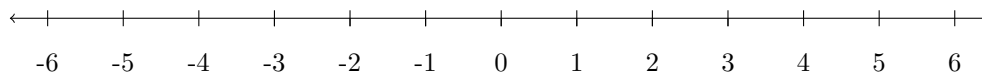
Answer: _____

6. (9 points) Using the number line below, graph the following intervals. Clearly label which is which.

(a) $(-3, 0)$

(b) $(2, 6]$

(c) $[-5, 3]$



7. (11 points) Fill in the table below:

$a^m a^n =$	$\left(\frac{a}{b}\right)^n =$	$a^{1/2} =$
$\frac{a^m}{a^n} =$	$a^0 =$	$a^{1/n} =$
$(a^m)^n =$	$a^{-1} =$	$a^{m/n} =$
$(ab)^n =$	$a^{-n} =$	

8. (12 points) Factor the following expressions.

(a) $x^2 - 36$

Answer: _____

(b) $3x^3 - x^2 + 6x - 2$

Answer: _____

(c) $8x^2 + 10x + 3$

Answer: _____