Basic Skills Practice Test **Name**_____

Conceptual Questions Some of these items will be on the actual test

1. What is the first step when adding or subtracting mixed numbers or fractions?

2. What is the definition of "Rational Numbers"?

3. What is the first step when multiplying or dividing mixed numbers?

4. What is the definition of "Integer Numbers"?

5. Explain the "Universe of Numbers" by illustrating the various number sets and how each is related.

5.1 Provide an example of each **number set**.

Natural / Counting Numbers -

Whole Numbers -

Integer Numbers -

Rational Numbers -

Irrational Numbers -

Real Numbers -

6. Illustrate the borrowing idea with this problem.

$$25\frac{1}{3} - 20\frac{3}{4}$$

Knowing the Squares (Should take less than a minute to do entire section)

1. $13^2 =$ 1. _____

2. $16^2 =$ 2. _____

3. $18^2 =$ 3. _____

4. $19^2 =$ 4. _____

5. $21^2 =$ 5. _____

6. $22^2 =$ 6. _____

7. $23^2 =$ 7. _____

8. $25^2 =$ 8. _____

Addind and Subtracting Integers

1. $25 + 14 - 11$ 1. _____

2. $-17 + (-13) + 3$ 2. _____

3. $7 - (-5) - 19$ 3. _____

Multiplying and Dividing Integers

4. $(-12)(5) \div (-6)$ 4. _____

5. $(-4)(-3) \div 2(-6)$ 5. _____

6. $-5 \bullet -3 \bullet 0 \bullet 7$ 6. _____

Addind and Subtracting Rationals

7. $-8\frac{1}{4}+12\frac{2}{5}-3\frac{7}{10}$ 7. _____

8. $-4\frac{2}{5}-\left(-4\frac{1}{2}\right)-2\frac{3}{5}$ 8. _____

Multiplying and Dividing Rationals

9. $\left(-\frac{1}{5}\right)\div\frac{2}{15}\bullet\left(-1\frac{1}{7}\right)$ 9. _____

10. $\left(-4\frac{2}{3}\right)\div\left(-3\frac{1}{2}\right)\bullet 1\frac{1}{5}$ 10. _____

11. $\frac{8}{15}\div\left(-\frac{2}{5}\right)\div\left(-\frac{1}{2}\right)$ 11. _____

Order of Operations

12. $2\left[(16 \div 8) - (-2)\right] + 4$

13. $\frac{2}{3}\left[8(2-5)^2 + 3 \bullet 2\right]$

Order of Operations

14. $6\left[3 - (-4 + 2) \div 2\right]$

15. $9\left[\left(\frac{5}{8} - \frac{1}{4}\right) \bullet \frac{1}{9} \div \frac{3}{4}\right]$

(Show all work since answers given)

16. $\left(-\frac{3}{5}\right)^2 - \frac{3}{5} \bullet 2\frac{3}{5} + \frac{7}{10} = -\frac{1}{2}$

17. $\left[\frac{1}{6} \div \frac{5}{9} - \left(\frac{1}{5}\right)^2\right] - \frac{7}{10} = -\frac{11}{25}$

Exploring Patterns

A. 1, 2, 4, 8, 10, 20, 22, _____ , _____ , _____

B. 33, 39, 40, 47, 48, 56, 57, _____ , _____ , _____

C. 4, 7, 12, 19, 28, 39, 52, _____ , _____ , _____

D. 169, 196, 225, 256, 289, 324, _____ , _____ , _____

E. 10, 8, 16, 18, 9, 6, 18, 21, 7, 3 _____ , _____ , _____

F. 80, 77, 76, 72, 71, 66, 65, _____ , _____ , _____