MATH E-3: Assignment 2 - SOLUTIONS

Total possible points = 33

What set(s) of numbers do the following belong to (real, rational, irrational, integers, whole, natural). **Be sure to list all for full credit.**

1) $-1/5$ real, rational **2 points**

2) $\sqrt{3}$ real, irrational, **3 points**

3) π real, irrational **2 points**

4) -17 real, rational, integer **2 points**

5) Is -2/3 a natural number? Why or why not?
No, because it's not a counting number. **2 points**

6) Is 5/6 a rational number? Why or why not? **2 points**

Yes, it's the ratio of two integers, and it produces a repeating decimal, .833333……

Simplify if possible. If not, tell why you cannot:

7) $\sqrt{36}$ 6 (-6 is also OK) **1 point**

8) $\sqrt[3]{-64}$ -4 **1 point**

9) $\sqrt[2]{-25}$ You can't do this in the real number system. The product of the same two real numbers can never be negative. **1 point**

10) $\sqrt[4]{625}$ 5 **1 point**

Calculate the following:

11) -17 - (-9) -17 + 9 = -8 **1 point**

12) -5 – 23 -5 + -23 = -28 **1 point**

13) $\frac{(-6)(-4)(3)}{-8+-4}$ $\frac{24x3}{-12} = \frac{72}{-12} = -6$ **2 points**

14) $6 - 2(5-3)^2 + 21 \div 7 \times 4$

$6 - 2(2)^2 + 21 \div 7 \times 4$
$6 - 2(4) + 21 \div 7 \times 4$
$6 - 8 + 21 \div 7 \times 4$
$6 - 8 + 3 \times 4$
$6 - 8 + 12$
$-2 + 12$
10 **2 points**

15) $(2015)^0 = 1$ **1 point**

16) $-48 + 63 = 15$ **1 point**

17) $(-8) \times 4(-5) \times (-3)$
$-8 \times -20 \times -3$
160×-3
-480 **2 points**

18) $\frac{(-4) \times (-5) \times 6}{(-12) \times 4 \div 8} = \frac{20 \times 6}{-48 \div 8} = \frac{120}{-6} = -20$ **2 points**

19) $(5 - 18) + 4(5 - 7)^2 + 24 \div 3 \times 2$
Work:
$-13 + 4(-2)^2 + 24 \div 3 \times 2$
$-13 + 4(4) + 24 \div 3 \times 2$
$-13 + 16 + 24 \div 3 \times 2$
$-13 + 16 + 8 \times 2$
$-13 + 16 + 16$
$3 + 16 = 19$ **3 points**

20) $|-25| = 25$ **1 point**