MATH 125 - TEST 1
(Chapters 1 & 2.1-2.3)

100 points   NAME:_____

Show all work clearly on this test paper. No credit will be given for solutions if work is not shown. No scratch paper. No calculators.

In problems 1 - 5, circle the correct answer: T for True, F for False.   (2 points each)

T   F   (1) 2(x + 3)= 2x + 6 is an example of the commutative property of addition.

T   F   (2)   - 4^2 = 16

T   F   (3) $\frac{1}{7}x$ means the same thing as $\dfrac{x}{7}$.

T   F   (4) $\dfrac{6}{0} = 0$

T   F   (5)   All natural numbers are rational numbers.

Fill in the blanks with the most appropriate answer. (2 points each)

(6)   Five more than the product of three and six is what number?_____.

(7)   xy = yx is an example of the _____ property.

(8)   Give an example of the associative property: _____

(9)   Find the prime factorization of 160 _____

(10) 2x²-3 = 5(3x-17) is not an example of a linear equation because   _____

In problems 11 - 16 , perform the indicated operation. Express fractions in lowest terms. Work carefully, no partial credit will be given. (2 points each)

11) $\left(\dfrac{3}{14}\right)\left(\dfrac{42}{9}\right)=$ _____ .   12)   3(2+1) - 5(2)(7)   = _____ .

13) 2 • 16 - 6 ÷ 3 (3-1) = _____ .   14) $\dfrac{4}{5} \div (-2)$ = _____

15) $\dfrac{5}{12} - \dfrac{7}{18}$ = _____ .   16) $5\frac{1}{4} + 7\frac{5}{6} =$ _____

17) Identify as an expressions or equations.   (3 points)

a) 3-2(x+1)-4x   b) $\dfrac{1}{4}$ c) $\dfrac{3}{5}x - 7 = 1$

Solve the given equations in 18-25. It is not required that you check your answers, however, it is highly recommended. (Problems 18 and 19 are worth 3 points each, 20-25 are 5 points each)

18)   z -2 = -7

19) $\frac{2}{5}x = 12$

20)   -5x + 16 = 36

21)   9x + 8 = 7 -3x

22) 5x + 2 = 3(2x-7) + 1

23) 4(x+2) = 3x + 5 - (x+8)

24) $\frac{1}{3}(x+3) + \frac{1}{6}(x-6) = x + 3$

25) 0.6(100-x) + 0.4x = 0.5(92)

(26)   List all numbers from the set $\left\{-3.1, -2, 0, 4, \sqrt{5}, 5\frac{1}{3}, 6.2\right\}$ that are

(6 points)

(a) whole numbers_____

(b) rational numbers_____

(c) integers _____

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(27)   Solve. (a) s + 9 + 7s = 4(3+2s) - 3   (b)   8(t-3) + 4t = 6(2t+1) – 10

(8 points)

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(28) Evaluate x^2 - (y^3 + z) when x= ⁻2, y=-1 and z=2.   (3 points)

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(29) Suppose you solved the problem 5 - (4+2x) = 8(2x-1) and got the solution x=3. Show how you would check whether your answer is correct. Is x=3 a solution?   (3 points)

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(30) Translate into a variable expression. Use x to represent the number.   (3 points)

(a)   " the product of a number and 12 ".

(b) " 15 subtracted from a number"

(c)   "the quotient of 6 and the product of 2 and a number"

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(31) Translate into an equation and then solve: (6 points)

(a) If twice a number is subtracted from 3, the result is the number. Find the number.

(b) One added to three times a number is three less than four times the number. Find the number.

1) False, distributive   2) False, -4^2 is -16 , $(-4)^2$ would be positive 16,   3) True
4) False, you cannot divide by zero, it is undefined, 5) True,

6) 23,   7) commutative,   8) (3+7)+6 = 3 + (7 + 6), 9) $2^5 \bullet 5$, 10) not power 1

11) 1, 12) -61, 13) 28, 14) -6/5, 15) 1/36 , 16) 157/12

17) a, b are expressions, c is an equation.

18) z= -5, 19) x=30, 20) x= -4, 21) x = -1/12, 22) x=22, 23) x= -11/2

24) x = -6   25) x = 70,

26) a) 0, 4,   b) $\left\{-3.1, \ -2, \ 0, \ 4, \ 5\tfrac{1}{3}, \ 6.2\right\}$, c) -2, 0, 4

27) a) All real numbers, b) No solutions,   28) 3   29) no

30) a) 12x, b) x-15, c) $\dfrac{6}{2x}$,

31) a)   3-2x = x, x=1   b) 3x+1=4x-3, x=4