Math 112B Group Review Assignment (4.5, 5.1–5.4)

Print Name_____

MULTIPLE CHOICE. Choose the one alternative that best completes the statement or answers the question. Write your answer in the blank provided and record your answer on the scantrom answer sheet. (You will not be getting the scantron answer sheet back.) If a question appears to not have instructions, the instructions for the previous question apply. Good luck and have fun!

Solve.

1) Doreen and Irena plan to leave their houses at the same time, roller blade towards each other, and meet for lunch after 3 hours on the road. Doreen can maintain a speed of 6.3 miles per hour, which is 90% of Irena's speed. If they meet exactly as planned, what is the distance between their houses?

1) _____

    A) 18.9 miles

    B) 21 miles

    C) 35.91 miles

    D) 39.9 miles

Fill in the blank.

2) A system of equations that has no solution is called a(n) _____ system.

2) _____

    A) inconsistent

    B) consistent

    C) dependent

    D) independent

Simplify the expression.

3) $12^0 + 14^0$

3) _____

    A) 26

    B) 2

    C) 1

    D) 0

Use the product rule to simplify the expression. Write the result using exponents.

4) $x^2 \cdot x^7$

A) x^{10}

B) x^7

C) x^9

D) x^2

4) _____

Use the power rule to simplify the expression.

5) $(5^4)^8$

A) 5^{12}

B) 25^{32}

C) 5^{32}

D) 25^4

5) _____

Simplify the expression.

6) $(14b)^0$

A) 1

B) b

C) 0

D) 14

6) _____

Perform the indicated operation.

7)

$$5n^5 + 17n^3 - 19$$
$$- (8n^5 + 1n^3 + 9)$$

  A) $-15n^8$

  B) $-3n^5 + 25n^3 - 10$

  C) $-3n^5 + 16n^3 - 28$

  D) $-3n^5 + 16n^3 - 10$

Find the degree of the following polynomial and determine whether it is a monomial, binomial, trinomial, or none of these.

8) $20xyz + 7x^2z - 3y^2z^3 + 21xy - x^2y^2z^2$

  A) 1; trinomial

  B) 6; trinomial

  C) 5; none of these

  D) 6; none of these

Simplify.

9) If $P(x) = 3x - 8$, find $P(a)$.

  A) $3a - 8$

  B) $3x - 8$

  C) $3a$

  D) $-5a$

Find the degree of the following polynomial and determine whether it is a monomial, binomial, trinomial, or none of these.

10) $10q^2r^2 + rs^3 + 12qr^2s$

A) 4; none of these

B) 4; trinomial

C) 3; trinomial

D) 3; none of these

10) _____

Multiply.

11) $\left(x - \dfrac{1}{2} \right)\left(x - \dfrac{3}{8} \right)$

A) $x^2 - \dfrac{7}{8}x + \dfrac{3}{16}$

B) $x^2 - \dfrac{19}{32}x - \dfrac{5}{32}$

C) $x^2 - \dfrac{1}{8}x + \dfrac{3}{16}$

D) $x^2 - \dfrac{19}{32}x + \dfrac{3}{16}$

11) _____

12) $-y(9x^3 - 3y + 9x - 3y^3)$

A) $-9x^3 + 3xy^2 - 9xy^3 + 3$

B) $-9x^3 + 3x^2y - 9y^2 + 3y^3$

C) $9x^3y - 3y^2 + 9xy^3 - 3y^4$

D) $-9x^3y + 3y^2 - 9xy + 3y^4$

12) _____

13) $-2x(2x^2 - 7x + 6)$

    A) $-4x^3 + 14x^2 - 12$

    B) $-4x^3 + 14x^2 - 12x$

    C) $-4x^2 + 14x - 12$

    D) $-4x^3 - 7x + 6$

13) _____

14) $(4.8x^3)(4x^7)$

    A) $19.2x^{10}$

    B) $1.92x^{10}$

    C) $19.2x^{21}$

    D) $192x^{21}$

14) _____

15) $\left(4 + \dfrac{2}{5}z\right)\left(4 - \dfrac{2}{5}z\right)$

    A) $16 - \dfrac{4}{5}z^2$

    B) $16 + \dfrac{16}{5}z - \dfrac{4}{25}z^2$

    C) $16 - \dfrac{16}{5}z - \dfrac{4}{25}z^2$

    D) $16 - \dfrac{4}{25}z^2$

15) _____

Multiply using the FOIL method.

16) $(b + 5)(b + 10)$

    A) $2b^2 + 50$

    B) $2b + 50$

    C) $b^2 + 15b + 50$

    D) $b^2 + 15b + 15$

16) _____

Multiply.

17) $(10z + 7)^2$

    A) $100z^2 + 49$

    B) $100z^2 + 140z + 49$

    C) $10z^2 + 49$

    D) $10z^2 + 140z + 49$

17) _____

Multiply using the FOIL method.

18) $(4x - 1)(4x + 5)$

    A) $16x^2 - 5$

    B) $16x^2 + 16x - 5$

    C) $16x^2 + 24x - 5$

    D) $8x^2 + 4$

18) _____

Given the cost function, C(x), and the revenue function, R(x), find the number of units x that must be sold to break even. Hint: Find R(x) – C(x).

19) C(x) = 74x + 1680   19) _____
     R(x) = 98x
       A) 72 units

       B) 71 units

       C) 70 units

       D) 14 units

Solve.

20) A store sells tents, sleeping bags, and camp stools. A customer buys a tent, 2 sleeping bags, and 3   20) _____
    camp stools for $139. The price of the tent is 8 times the cost of a camp stool. The cost of a sleeping
    bag is $11 more than the cost of a camp stool. Find the cost of each item.
      A) $80 for a tent; $20 for a sleeping bag; $10 for a camp stool

      B) $72 for a tent; $20 for a sleeping bag; $9 for a camp stool

      C) $72 for a tent; $25 for a sleeping bag; $14 for a camp stool

      D) $72 for a tent; $20 for a sleeping bag; $10 for a camp stool

1) D
   Objective: (4.5) Solve problems that can be modeled by a system of two linear equations.
2) A
   Objective: (4.6) Vocabulary Check
3) B
   Objective: (5.1) Use the definition of a number raised to the 0 power.
4) C
   Objective: (5.1) Use the product rule for exponents.
5) C
   Objective: (5.1) Use the power rule for exponents.
6) A
   Objective: (5.1) Use the definition of a number raised to the 0 power.
7) C
   Objective: (5.2) Add and subtract polynomials.
8) D
   Objective: (5.2) Define polynomial, monomial, binomial, trinomial, and degree.
9) A
   Objective: (5.2) Concept Extensions
10) B
   Objective: (5.2) Define polynomial, monomial, binomial, trinomial, and degree.
11) A
   Objective: (5.3) Use the distributive property to multiply polynomials.
12) D
   Objective: (5.3) Use the distributive property to multiply polynomials.
13) B
   Objective: (5.3) Use the distributive property to multiply polynomials.
14) A
   Objective: (5.3) Multiply monomials.
15) D
   Objective: (5.4) Multiply the sum and difference of two terms.
16) C
   Objective: (5.4) Multiply two binomials using the FOIL method.
17) B
   Objective: (5.4) Square a binomial.
18) B
   Objective: (5.4) Multiply two binomials using the FOIL method.
19) C
   Objective: (4.5) Solve problems with cost and revenue functions.
20) B
   Objective: (4.5) Solve problems that can be modeled by a system of three linear equations.