

Trimester 1 - Take Home Assignment 1:

Topic 1.1: The Real Number System - Answer all questions in the space provided.

1-5; determine if the number is rational or irrational. Explain your answer. [1 point each]

1.  $-0.5$

2.  $0.45454545\dots$

3.  $\sqrt{25}$

4.  $\sqrt{35}$

5.  $0.12112111211112\dots$

6-10; arrange each of the following sets of numbers in order from least to greatest. If two numbers are equal state that they are equal. [1 point each]

6.  $1.4, 4.4, 0.444$

7.  $\sqrt{5}, 2\sqrt{2}, \frac{\sqrt{8}}{2}$

8.  $\frac{7}{3}, \sqrt{7}, \sqrt{\frac{7}{3}}$

9.  $\pi, \frac{22}{7}, 3.14$

10.  $\frac{1}{3}, \frac{3}{10}, 0.3333$

Topic 1.2: Writing and solving Equations and Inequalities - Answer all questions in the space provided. Show all work to receive full credit. Correct answers with no work shown will receive 1 point.

1-5; Solve the following equations and inequalities.

1.  $14 - 5x = 2x$  [2 points]

2.  $3x + 7 = 43 - x$  [3 points]

3.  $4(x + 4) = x + 2(x + 11)$  [4 points]

4.  $3x + 1 \geq x - 7$  [3 points]

5.  $3x - 7 < 2 - (2x + 6)$  [4 points]

6-9; Translate the following situations into algebraic equations or inequalities and solve. Show all work to receive full credit. Correct answers with no work shown will receive 1 point.

6. Eight more than twice a number is equivalent to three times the number. [2 points]

7. Three times a number increased by eight is five less than twice the number plus seven. [4 points]

8. Seven increased by 4 less than twice a number is 12. [4 points]

9. For service hours this summer, a student decided to help at the Special Olympics at the Nassau County Aquatic Center. She was put in charge of a souvenir booth that sold calendars, c, beach towels, b, and swimsuits, s. Calendars sold for \$10, towels for \$15, and swimsuits for \$24. She sold twice as many calendars as swimsuits, and sixteen more towels than swimsuits. If she sold 452 items in all, (a) how many calendars, towels, and swimsuits did she sell [4 points], and (b) how much money did she raise for the Special Olympics [2 points]?

Topic 1.3: Adding and Subtracting Polynomials.

1-3; perform the indicated operation and state the degree of the polynomial that results after performing the operations. Show all work to receive full credit. Correct answers with no work shown will receive 1 point.

1.  $(3x^4 - 2x^3 + 2x^2 - 5x - 4) + (-4x^4 + x^3 + 3x^2 + 7x + 9)$  [2 points]

2.  $(x^5y^2 - 2x^4y^3 + 14x^3y^4) - (2x^5y^2 + 3x^4y^3 - 11x^3y^4)$  [2 points]

3.  $-(3x^2 + 4xy - y^2) + (x^2 - 8y^2)$  [2points]

4-5; Circle the correct response. Partial credit may be awarded for work shown. [2 point each]

4. Melody downloaded  $4x^2 + 3x + 8$  songs to her phone yesterday. Previously, she had downloaded  $12x^2 - 8x + 17$  songs. If she deleted  $2x^2 - x + 4$  songs, how many songs are on her phone now?

a)  $18x^2 - 6x + 29$

c)  $6x^2 - 6x + 13$

b)  $14x^2 - 4x + 21$

d)  $14x^2 - 6x + 29$

5. Michael spent  $2x^2 - 6x + 10$  dollars at the store. He gave the cashier  $5x^2 + x - 12$  dollars. Which expression represents the amount of change he received?

a)  $7x^2 - 5x - 2$

c)  $3x^2 - 7x + 22$

b)  $3x^2 - 5x - 2$

d)  $3x^2 + 7x - 22$

Topic 1.4 - Multiplying Polynomials - Answer all questions in the space provided.

1-4; Perform the indicated multiplication in each problem and combine like terms if possible.

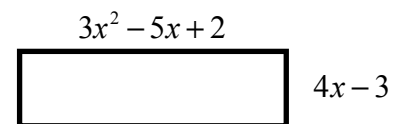
1.  $(6x^2)(3x^3 - 2x^2 + x - 1)$  [3 points]

2.  $(3x^2y^3)(4x^3y - 3x^2y^2 + 5xy^3)$  [3 points]

3.  $(x^2 - 4)(x^2 + 4)$  [4 points]

4.  $(4x + 5)^2 - (3x - 4)^2$  [4 points]

5. Find the area of the figure on the right. [3 points]



6. Find the area of the figure on the right. [3 points]

