

Math 095
Exam #2
Fall 2010

Name:

1. 15 pts. A one-cup serving of orange juice contains 3 mg less than four times the amount of vitamin C as a one-cup serving of pineapple juice. Servings of the two juices contain a total of 122 mg of vitamin C. How many milligrams of vitamin C are in a serving of each type of juice?

2. 15 pts. Venus is 31.2 million miles farther from the sun than Mercury, while Earth is 57 million miles farther from the sun than Mercury. If the total of the distances from these three planets to the sun is 196.2 million miles, how far away from the sun is Mercury?

3. 15 pts. Find the measure of an angle whose supplement is eight times its measure.

4. 5 pts. For $-4p^7 + 8p^7 + 5p^9$, combine like terms.

5. 5 pts. Perform the indicated operation: $(x^2 + x) - (3x^2 + 2x - 1)$.

6. 5 pts. Simplify $5^3 \cdot 5^8 \cdot 5^2$, writing the answer in exponential form.

7. 5 pts. Evaluate $\left(\frac{1}{2}\right)^{-4}$

8. 10 pts. each Find each product.

(a) $(9y - 2)(8y^2 - 6y + 1)$

(b) $(4r + 1)(2r - 3)$

(c) $(x - 3)^2$

9. 10 pts. Perform the division:

$$\frac{120x^6 - 60x^3 + 80x^2}{2x}$$

10. 5 pts. Write 5,307,000,000 in scientific notation.

11. 5 pts. Write -8.02×10^{-9} without exponents.

12. 10 pts. Factor out the greatest common factor: $65u^{10} + 45u^4$.

13. 10 pts. each Factor each completely.

(a) $w^2 + w - 20$

(b) $p^2 + 9pq + 8q^2$

(c) $2t^3 + 8t^2 + 6t$

(d) $12z^2 + 11z - 5$