

MATH 095 EXAM #2 KEY (FALL 2010)

1. Let x be the amount of vitamin C in a cup of pineapple juice. Then $(4x - 3) + x = 122$, which gives $x = 25$. Thus pineapple juice has 25 mg per cup, and orange juice has 97 mg per cup.

2. Let x be the distance from Mercury to the sun. Then $(x + 31.2) + (x + 57) + x = 196.2$, which gives $3x = 108$ and finally $x = 36$. Thus Mercury is 36 million miles from the sun.

3. Let x be the measure of the angle. Then $x + 8x = 180$, which gives $x = 20$. Thus the angle is 20° .

4. $4p^7 + 5p^9$

5. $-2x^2 - x + 1$

6. 5^{13}

7. $\frac{1^{-4}}{2^{-4}} = \frac{1}{2^{-4}} = 2^4 = 16$

8a. $72y^3 - 70y^2 + 21y - 2$

8b. $8r^2 - 10r - 3$

8c. $(x - 3)^2 = (x - 3)(x - 3) = x^2 - 6x + 9$

9. $\frac{120x^6}{2x} - \frac{60x^3}{2x} + \frac{80x^2}{2x} = 60x^5 - 30x^2 + 40x$

10. 5.307×10^9

11. -0.00000000802

12. $5u^4(13u^6 + 9)$

13a. $(w + 5)(w - 4)$

13b. $(p + q)(p + 8q)$

13c. $2t(t^2 + 4t + 3) = 2t(t + 3)(t + 1)$

13d. $(3z - 1)(4z + 5)$