MTH-100 Review for Test 1 Answers Luczak

1. $\dfrac{50x^8y^{11}}{z^9}$

2. $\dfrac{9x^{10}}{4y^{14}z^{12}}$

3. a) $4.32\times10^9$ b) $5.36\times10^{-4}$

4. a) $3\times10^4$ b) $3\times10^{-9}$

5. $-x^4+33x^2y+9x^2$

6. a) $25x^4-30x^2+9$ b) $-2x^4-2x^3+19x^2+x-6$ c) $-8x^3y^9z$

7. a) $2xy\left(9x^2+5y^4\right)$ b) $(7x+8)^3(28ax+32a-1)$ c) $4(x-2)(x+2)(x+3)$

   d) $(x-13)(x+3)$ e) $(3x+2)(4x+5)$ f) unable to be factored

8. c, if negating the fraction either the numerator OR denominator can be multiplied by $-1$, if it is the numerator and it has 2 or more terms the negative would need to be distributed.

9. $\dfrac{-4x}{3x+4}$

10. $\dfrac{x}{x-8}$

11. $\dfrac{(x-4)(x+2)}{(x+4)\left(x^2+4\right)}$

12. $\dfrac{(x+3)^2}{20(x-3)}$

13. $\dfrac{12y-5x^2}{90x^3y^2}$

14. $\dfrac{-3x^2-14x+1}{(x+1)(x+6)(x-3)}$

15. $\dfrac{x^2-7x+32}{(x-4)(x+4)(x+1)}$

16. a) $\dfrac{24x+12}{2x^2+x}$ b) $\dfrac{-1}{x(x+h)}$ c) $\dfrac{4x+9}{16-81x}$

17. a) $[-5,\infty)$ b) $\left(-12,\dfrac{14}{3}\right]$ c) $(-\infty,4)\cup(8,\infty)$ d) $(3,9)$

18. a) $x=\dfrac{1}{3},\dfrac{7}{3}$ b) $x=-2,6$ c) no real solution

19. $A=(-4,-2)$ $B=(2,-5)$ $C=(-3,4)$ $D=(1,5)$ $E=(5,0)$

20. a) Not a function. Domain: $\{-5,-4,4,11\}$ Range: $\{-2,-1,0,1,3\}$

b) Function. Domain: $\{-3,-2,0,2,4\}$ Range: $\{5,9,14,21\}$

21. Yes, it is a function. Domain: $(-\infty,\infty)$ Range: $[-4,\infty)$

22. a) 0 b) $-\frac{1}{2}$ c) $-\frac{3}{2}$ d) $\frac{a^3-1}{a^2+2}$ e) $\frac{(x+h)^3-1}{(x+h)^2+2}$