

MAT 1033 - Practice for Test 1

Review Sections

Perform the following operations and simplify your answers:

1.. $12x^3 + 2y^2 - 5x^3 + 4y^2$

2. $(5x^2 + 7x - 9) - (3x^2 + 2x - 7)$

3. $4a^3 (2a^2 - 7a + 2)$

4. $(x + 7)(x - 7)$

5. $(x + 5)(2x - 4)$

6. $(3x - 2)(5x - 3)$

7. $(x - 3)^2$

8 - 9 -- EVALUATE:

8. $14a^0$ if $a = 93$

9. $2a^2b + 3b^2a$ if $a = -2$ and $b = 3$

10 - 20 -- FACTOR COMPLETELY:

10. $10a^2 - 490$

11. $x^3 - x^2 - 6x$

12. $2x^4 - 162$

13. $9x^2 - 25y^2$

14. $x^3 - 1$

15. $16x^3 + 54$

16. $x^2 - 7x - 8$

17. $x^2 - 20x + 36$

18. $6x^2 + 11x - 10$

19. $8x^2 + 8y^2$

20. $36x^2 + 12xy + y^2$

21 - 22 -- SIMPLIFY:

21. $-5^2 + (-4)^2$

22. $|4 - 3^2(2)| - 1 + 2$

23. $14 - 6 \cdot 4 + 6$

24. $\frac{2}{3} - \left(-\frac{3}{4}\right)$

25. $-2.31 + 8.6$

26. $(-2.3)(5.4)$

27. $\left(\frac{3}{5}\right)\left(-\frac{4}{5}\right)$

Chapter 6

Reduce

1. $\frac{9x - 12x^2}{15x}$

2. $\frac{8m^3 + 6m^2}{6m^2 + 8m}$

Perform the indicated operations

3. $\frac{5x^2}{16y^3} \cdot \frac{8y^4}{15x^3}$

4. $\frac{x+2}{6x^2} + \frac{7}{8x^3}$

5. $\frac{5x-2}{4x-8} - \frac{3x+2}{4x-8}$

6. $\frac{y^2 - 3y - 4}{y^2 - 2y - 8} \div \frac{y^2 - 4}{y^2 + 4y + 4}$

7. $\frac{x+3}{x^2 - 4x - 5} - \frac{2}{5-x}$

8. $\frac{7}{x+8} + \frac{5}{x+3}$

9. $\frac{4x}{x^2 - 36} \cdot \frac{x^2 - 5x - 6}{4x^2 + 4x}$

10. $\frac{3}{x^2 - 16} - \frac{x}{x+4}$

11. $\frac{2x^2 + x - 15}{x^2 - 9} \div (20 - 8x)$

Answers – Review Sections:

1. $7x^3 + 6y^2$ 2. $2x^2+5x-2$ 3. $8a^5-28a^4+8a^3$
4. $x^2 - 49$ 5. $2x^2+6x-20$ 6. $15x^2-19x+6$ 7. x^2-6x+9
8. 14 9. -30 10. $10(a+7)(a-7)$ 11. $x(x-3)(x+2)$
12. $2(x^2+9)(x+3)(x-3)$ 13. $(3x+5y)(3x-5y)$ 14. $(x-1)(x^2+x+1)$
15. $2(2x+3)(4x^2-6x+9)$ 16. $(x-8)(x+1)$ 17. $(x-2)(x-18)$
18. $(3x-2)(2x+5)$ 19. $8(x^2+y^2)$ 20. $(6x+y)(6x+y)$ 21. -9 22. 15 23. -4
24. $17/12$ 25. 6.29 26. -12.42 27. $-12/25$

Answers – Chapter Six:

1. $\frac{3-4x}{5}$ 2. $\frac{m(4m+3)}{(3m+4)}$ 3. $\frac{y}{6x}$ 4. $\frac{4x^2+8x+21}{24x^3}$ 5. $\frac{1}{2}$ 6. $\frac{y+1}{y-2}$ 7. $\frac{3x+5}{(x+1)(x-5)}$
8. $\frac{12x+61}{(x+3)(x+8)}$ 9. $\frac{1}{(x+6)}$ 10. $\frac{-x^2+4x+3}{(x+4)(x-4)}$ 11. $\frac{-1}{4(x-3)}$