2R

NEW YORK CITY COLLEGE OF TECHNOLOGY
of the City University of New York

DEPARTMENT OF MATHEMATICS
Revised Fall 2019 W. Colucci

MAT065 FINAL EXAM REVIEW – FORM 2R

1. Solve for M: $F = \dfrac{MV + R}{K}$

2. Solve: $x^2 + 10x = 24$

3. Solve : $5(x-3) - (x-7) = 2(x+1)$

4. Solve: $20x^2 - 12x = 0$

5. Factor Completely: $18y^2 - 50$

6. Multiply: $(2x-3)(6x^2 - 5x - 4)$

7. Evaluate: $\dfrac{a^2 - 4b}{2c}$ **if** $a = -2,\ b = -3,\ c = -1$

8. Simplify: $\dfrac{6a^3b^7 - 15a^2b^3c + 9ab^5}{3ab^2}$

9. Check if $x = -2$ **is a solution to the equation**:

$x^3 - 3x - 1 = 3x^2 + 5x - 5$

10. Combine: $\dfrac{3}{8} - \dfrac{7}{10x}$

11. Write in simplest radical form: $2\sqrt{9} + 3\sqrt{50} - \sqrt{32}$

12. Solve: $36m^2 = 25$

13. Evaluate: $\dfrac{-5 - 3^2}{-2} - 3(2-6)$

14. Simplify: $8x^3 - 3x(2x^2 - 3y) - 3y(4x)$

15. Factor Completely: $24x^5y^3 - 16x^7y^2 + 8x^2y^2$

16. Factor Completely: $4y^2 - 5y - 6$

17. State the slope, y-intercept and then sketch the graph for: $3x - 2y = 4$

18. Simplify completely: $\dfrac{5x^2 + 15x}{x^2 - 9}$

19. Simplify completely: $\left(\dfrac{22x^2y^8}{27x^6}\right)\left(\dfrac{-18xy}{55x^4y^3}\right)$

20. Solve Algebraically:
$$\begin{aligned} 3x + 2y &= 7 \\ 5x + 6y &= 1 \end{aligned}$$

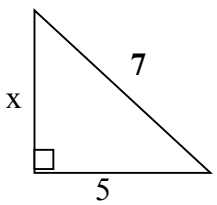
21. Solve: $\dfrac{x}{2} + \dfrac{3}{4} = \dfrac{5x}{12}$

22. Solve the inequality and sketch the solution on the number line: $-5 + 2x \geq 5x - 17$

23. Write an equation to represent the following problem, and then solve that equation:
If ten times a number is increased by four, the result is twelve less than nine times the number.

24. **Write the equation of a line through the points** $(-1, -3)$ and $(1, -7)$ **in slope-intercept form** $(y = mx + b)$

25. Solve for x in the given right triangle. Your solution must be in simplest radical form:



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ANSWERS TO MA065 FINAL EXAM REVIEW - FORM 2R

1. $M = \dfrac{FK - R}{V}$

2. $x = -12, 2$

3. $x = 5$

4. $x = 0, \frac{3}{5}$

5. $2(3y-5)(3y+5)$

6. $12x^3 - 28x^2 + 7x + 12$

7. -8

8. $2a^2b^5 - 5abc + 3b^3$

9. Yes, since $-3 = -3$

10. $\dfrac{15x - 28}{40x}$

11. $6 + 11\sqrt{2}$

12. $x = \dfrac{5}{6},\ x = -\dfrac{5}{6}$

13. 19

14. $2x^3 - 3xy$

15. $8x^2y^2(3x^3y - 2x^5 + 1)$

16. $(4y+3)(y-2)$

17. $y = \dfrac{3}{2}x - 2$ and Slope = $\frac{3}{2}$, y-int = $(0, -2)$

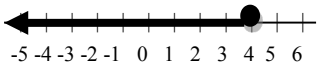
18. $\dfrac{5x}{x-3}$

19. $-\dfrac{4y^6}{15x^7}$

20. $x = 5,\ y = -4$

21. $x = -9$

22. $x \le 4$



23. $10x + 4 = 9x - 12$, **thus** $x = -16$

24. $y = -2x - 5$

25. $2\sqrt{6}$