Review for Exam 2
MA 102

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1) Use substitution to solve the system of linear equations

$$2x - 3y = 11$$
$$4x + y = 1.$$

2) Use elimination to solve the system of linear equations

$$x - 2y = -5$$
$$2x + y = 15.$$

3) Factor $a^2 + 12x + 36$.

4) Multiply $-8xy^2(y^3x + 2xy - 11x^2)$.

5) Multiple $(3z - 1)(z^2 - 7z - 10)$

6) A plane flew 350mph against the wind and 500mph with the wind. Find the speed of the plane in still air and the speed of the wind.

7) Use graphing to solve the system of linear equations

$$\begin{aligned} x - y &= 5 \\ 2x - 3y &= 14. \end{aligned}$$

8) Factor $t^2 + 5t - 14$.

9) Divide $\dfrac{x^4 - 11x^3 + 12x^2 - 3x + 9}{x - 4}$

10) Solve the system of linear equations

$$\begin{aligned} x - y &= 0 \\ x - 4y &= -3. \end{aligned}$$

11) Factor out the greatest common factor $150x^3y^5 + 30x^2y^5 - 45x^5y^3 - 105x^3y$.

12) Factor by grouping $-15x - 2y + 3xy - 10$.

13) Factor $3x^2z + xz - 56z$.

14) Factor completely $98x^2y - 2y$.

15) Divide $\dfrac{14x^3y - 18xy^2 + 6xy}{2xy}$.

16) Subtract and simplify $(x^2 - 7x - 15) - (-2x^2 + x - 8)$.

17) Multiply $(3x - 7y)(3x + 7y)$.

18) Factor $2x^2 - 5x + 7$.

19) Use elimination to solve

$$\begin{aligned} x &= 40 - 5y \\ 5x - y &= 8. \end{aligned}$$

20) Multiply $3ab(-x^2 + 3a - 5b^2)$.