

CHAPTER 1 PRACTICE EXERCISES (*OPTIONAL)

1-01 SOLVE LINEAR SYSTEMS OF EQUATIONS AND INEQUALITIES BY GRAPHING

Graph the system and estimate the solution.

$$1. \begin{cases} y = -3x + 2 \\ y = 2x - 3 \end{cases}$$

$$2. \begin{cases} y = -x + 3 \\ -x - 3y = -1 \end{cases}$$

$$3. \begin{cases} y = 2x - 10 \\ x - 4y = 5 \end{cases}$$

$$4. \begin{cases} y = 3x + 2 \\ y = 3x - 2 \end{cases}$$

$$5. \begin{cases} y = 2x - 1 \\ -6x + 3y = -3 \end{cases}$$

Graph the system of inequalities.

$$6. \begin{cases} 2x - y > 4 \\ x - 2y < -1 \end{cases}$$

$$7. \begin{cases} 5x - 4y \leq 3 \\ 3x + 2y \leq 15 \end{cases}$$

$$8. \begin{cases} y \leq 2x + 3 \\ y \geq 5 \end{cases}$$

$$9. \begin{cases} y < \frac{2}{3}x + 2 \\ 2x - 3y < 6 \end{cases}$$

Problem Solving

10. Sally and Jamie are buying some little books about Jesus to pass out around their neighborhood. The prices are not labeled, but Sally bought 3 copies of book A and 4 copies of book B and paid \$18. Jamie bought 2 copies of book A and 3 copies of book B and paid \$13. How much does each book cost? (Solve by graphing.)

Mixed Review

11. (0-08) Tell whether the data has *positive*, *negative*, or approximately *no correlation*.

x	1	0.5	2	1.5	0.75	3	2.5
y	1.88	1.94	1.75	1.81	1.91	1.63	1.69

12. (0-06) Describe the transformations: $g(x) = \frac{1}{3}|x| + 5$

13. (0-04) Find the equation of the line with slope $-\frac{2}{3}$ and passes through (2, -1).

14. (0-03) Solve $3|x - 4| = 12$.

15. (0-01) Solve for y: $16xy + 2y = 1$

1-02 SOLVE LINEAR SYSTEMS ALGEBRAICALLY

Solve the system using substitution.

$$1. \begin{cases} 2x + 5y = 7 \\ x + 4y = 2 \end{cases}$$

$$2. \begin{cases} 6x - 2y = 5 \\ -3x + y = 7 \end{cases}$$

$$3. \begin{cases} 3x - y = 2 \\ 6x + 3y = 14 \end{cases}$$

$$4. \begin{cases} 3x + 2y = 6 \\ x - 4y = -12 \end{cases}$$

$$5. \begin{cases} 3x + y = -1 \\ 2x + 3y = 18 \end{cases}$$

$$6. \begin{cases} 3x + 7y = 13 \\ x + 3y = -7 \end{cases}$$

$$7. \begin{cases} 3x - y = -2 \\ 5x + 2y = 15 \end{cases}$$

Solve the system using elimination.

$$8. \begin{cases} 4x - 2y = -16 \\ -3x + 4y = 12 \end{cases}$$

$$9. \begin{cases} 3x - 4y = -10 \\ 6x + 3y = -42 \end{cases}$$

$$10. \begin{cases} 4x - 3y = 10 \\ 8x - 6y = 20 \end{cases}$$

$$11. \begin{cases} 2x + 5y = 14 \\ 3x - 2y = -36 \end{cases}$$

$$12. \begin{cases} 7x + 2y = 11 \\ -2x + 3y = 29 \end{cases}$$

$$13. \begin{cases} 3x + 4y = 18 \\ 6x + 8y = 18 \end{cases}$$

$$14. \begin{cases} 4x - 5y = 13 \\ 6x + 2y = 48 \end{cases}$$

Problem Solving

15. In Lily's garden, there are 5 rose bushes the first year. Each year, she adds two new rose bushes. She has 20 tulip plants the first year and loses 3 each year. When will the number of rose bushes equal the number of tulip plants?



Tulips (R09)

Mixed Review

$$16. (1-01) \text{ Solve by graphing: } \begin{cases} y = 2x - 6 \\ y = -\frac{1}{2}x - 1 \end{cases}$$

$$17. (0-07) \text{ Graph } y > \frac{1}{3}x - \frac{2}{5}.$$

$$18. (0-04) \text{ Find the slope of the line passing through } (2, 4) \text{ and } (-3, 2).$$

$$19. (0-03) \text{ Solve } \left| \frac{1}{2}x - 1 \right| = 5.$$

$$20. (0-01) \text{ Solve } 3x + 5 = 11.$$

1-03 SOLVE LINEAR SYSTEMS IN THREE VARIABLES

From the textbook page 32 #1, 5, 9, 15, 17, 19, 23, 43, 47, 51, 53, 55 = 12 (You can solve them all by elimination if you want.)

1-04 PERFORM BASIC MATRIX OPERATIONS

Page 650 #1, 5, 9, 13, 15, 17, 19, 21, 23, 25, 29, 33, 35, 37, 39, and Mixed Review = 20

Mixed Review

$$1. (1-03) \text{ Solve } \begin{cases} 2x + y - 3z = 2 \\ -2x - y + z = -4 \end{cases}$$

$$2x + 2y - 2z = 6$$

$$2. (1-03) \text{ Solve } \begin{cases} x + y + z = 4 \\ y + 2z = 5 \\ z = 3 \end{cases}$$

$$3. (1-02) \text{ Solve algebraically } \begin{cases} 2x - y = 5 \\ x + 3y = -8 \end{cases}$$

$$4. (1-01) \text{ Solve by graphing } \begin{cases} y = 2x - 5 \\ y = -x + 1 \end{cases}$$

$$5. (0-03) \text{ Solve } 2|x + 1| = 4.$$

1-05 MULTIPLY MATRICES

Page 658 #1, 5, 7, 9, 11, 13, 15, 17, 21, 23, 25, 29, 35, 39, 41, and Mixed Review = 20

Mixed Review

$$1. (1-04) \text{ Simplify } [3 \ 8] - [-1 \ 0].$$

$$2. (1-04) \text{ Simplify } 2 \begin{bmatrix} 3 \\ 3 \end{bmatrix} + 3 \begin{bmatrix} -1 \\ 5 \end{bmatrix}.$$

$$3. (1-02) \text{ Solve algebraically } \begin{cases} 2x - y = 4 \\ -6x + 3y = 1 \end{cases}$$

$$4. (1-01) \text{ Solve by graphing } \begin{cases} y < 2x + 1 \\ y \leq -2x - 1 \end{cases}$$

$$5. (0-04) \text{ Write the equation of the line with slope } -3 \text{ and passes through } (2, -5).$$

1-06 EVALUATE DETERMINANTS

Page 667 #1, 3, 5, 9, 13, 15, 17, 21, 23, 29, 31, 33, 35, 39, 45, and Mixed Review = 20

Mixed Review

$$1. (1-05) \text{ Simplify } \begin{bmatrix} 1 & -3 \\ 0 & -2 \end{bmatrix} \begin{bmatrix} 2 \\ 4 \end{bmatrix}.$$

$$2. (1-05) \text{ Simplify } [1 \ 2] \begin{bmatrix} 3 \\ 4 \end{bmatrix}.$$

$$3. (1-04) \text{ Simplify } \begin{bmatrix} 1 \\ 4 \end{bmatrix} + 3 \begin{bmatrix} -2 \\ 6 \end{bmatrix}.$$

$$4. (1-02) \text{ Solve algebraically: } \begin{cases} x - 3y = 6 \\ x + 3y = 0 \end{cases}$$

$$5. (1-01) \text{ Solve by graphing: } \begin{cases} 2x + y = 4 \\ y = 0 \end{cases}$$

