Lesson 14 Practice Problems

1. Which equation is the result of adding these two equations?

$$\begin{cases} -2x + 4y = 17 \\ 3x - 10y = -3 \end{cases}$$

   A. $-5x - 6y = 14$

   B. $-x - 6y = 14$

   C. $x - 6y = 14$

   D. $5x + 14y = 20$

2. Which equation is the result of subtracting the second equation from the first?

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

   A. $-9x - 4y = 8$

   B. $-x + 4y = 8$

   C. $x - 4y = 8$

   D. $9x - 8y = 8$

3. Solve this system of equations without graphing: $\begin{cases} 5x + 2y = 29 \\ 5x - 2y = 41 \end{cases}$

4. Here is a system of linear equations: $\begin{cases} 6x + 21y = 103 \\ -6x + 23y = 51 \end{cases}$

   Would you rather use subtraction or addition to solve the system? Explain your reasoning.

5. Kiran sells f full boxes and h half-boxes of fruit to raise money for a band trip. He earns \$5 for each full box and \$2 for each half-box of fruit he sells and earns a total of \$100 toward the cost of his band trip. The equation $5f + 2h = 100$ describes this relationship.

   Solve the equation for f.

(From Unit 2, Lesson 8.)

6. Match each equation with the corresponding equation solved for a.

A. $a + 2b = 5$	1. $a = \frac{2b}{5}$
B. $5a = 2b$	2. $a = \frac{-2b}{5}$
C. $a + 5 = 2b$	3. $a = -2b$
D. $5(a + 2b) = 0$	4. $a = 2b - 5$
E. $5a + 2b = 0$	5. $a = 5 - 2b$

(From Unit 2, Lesson 8.)

7. The volume of a cylinder is represented by the formula $V = \pi r^2 h$.

Find each missing height and show your reasoning.

volume (cubic inches)	radius (inches)	height (inches)
96π	4	
31.25π	2.5	
V	r	

(From Unit 2, Lesson 9.)

8. Match each equation with the slope m and y-intercept of its graph.

A. $m = -6$, y-int $= (0, 12)$

B. $m = -6$, y-int $= (0, 5)$

C. $m = -\frac{5}{6}$, y-int $= (0, 1)$

D. $m = \frac{5}{6}$, y-int $= (0, 1)$

E. $m = \frac{5}{6}$, y-int $= (0, -1)$

F. $m = \frac{5}{6}$, y-int $= (0, -5)$

1. $5x - 6y = 30$

2. $y = 5 - 6x$

3. $y = \frac{5}{6}x + 1$

4. $5x - 6y = 6$

5. $5x + 6y = 6$

6. $6x + y = 12$

(From Unit 2, Lesson 11.)

9. Solve each system of equations.

   a. $\begin{cases} 2x + 3y = 4 \\ 2x = 7y + 24 \end{cases}$

   b. $\begin{cases} 5x + 3y = 23 \\ 3y = 15x - 21 \end{cases}$

(From Unit 2, Lesson 13.)

10. Elena and Kiran are playing a board game. After one round, Elena says, "You earned so many more points than I did. If you earned 5 more points, your score would be twice mine!"

    Kiran says, "Oh, I don't think I did that much better. I only scored 9 points higher than you did."

    a. Write a system of equations to represent each student's comment. Be sure to specify what your variables represent.

    b. If both students were correct, how many points did each student score? Show your reasoning.

(From Unit 2, Lesson 13.)