Lesson 54A

1. Solve the system by the substitution method.

$$x = 6y + 7$$

$$5x + y = 66$$

2. Solve the system by the substitution method.

$$x = 3y + 3$$

$$2x + y = 20$$

3. Solve the system using substitution:

$$x - 2y = 2$$

$$y = -x + 5$$

[A] (5, 0) [B] $\left(1, -\frac{1}{2}\right)$ [C] (0, −1) [D] (4, 1)

4. Solve the system by the substitution method.

$$x = 5y + 7$$

$$7x + y = -131$$

5. Solve the system using substitution:

$$x - 2y = 2$$

$$y = -x + 5$$

[A] (0, −1) [B] $\left(1, -\frac{1}{2}\right)$ [C] (5, 0) [D] (4, 1)

6. Solve the system by the substitution method.

$$x = 3y + 6$$

$$8x + y = -152$$

7. Solve the system by the substitution method.

$$x = 4y + 2$$

$$6x + y = 112$$

8. Solve the system using substitution:

$$3x - 4y = 26$$

$$y = 3x - 11$$

[A] (2, −5) [B] $\left(-5, -\frac{41}{4}\right)$ [C] $\left(0, -\frac{13}{2}\right)$ [D] (3, −2

9. Solve the system by the substitution method.

$$x = 3y + 8$$

$$8x + y = 14$$

10. Solve the system by the substitution method.

$$x = 8y + 7$$

$$4x + y = -71$$

11. Solve the system by the substitution method.

$$x = 2y + 4$$

$$5x + y = -13$$

12. Solve the system by the substitution method.

$$x = 6y + 3$$

$$2x + y = 32$$

13. Solve the system by the substitution method.

$$x = 4y + 8$$

$$7x + y = -60$$

Simplify. Write the answer with all positive exponents.

14. $\dfrac{27x^{-3}y^{-2}\left(x^2\right)^{-2}x^2y^3}{\left(3x^0\right)^2x^{-1}y^{-2}\left(x^4\,y^2\right)^0}$

15. $\dfrac{x^6y^4z^0\left(x^5y^0\right)^{-1}x^5y^{-1}\left(z^{-2}\right)^3}{x^3\left(y^{-3}\right)^0x^3y^2x^{-3}\left(z^{-1}\right)^{-1}}$

16. Simplify. Write the answer with all variables in the denominator. $\left(\dfrac{3^0x^3y^{-4}}{4z^{-5}}\right)^{-3}\left(\dfrac{3x^4z^{-3}}{2y^{-5}}\right)$

17. Simplify. Write the answer with all exponents positive. $\left(\dfrac{2x^{-2}p^5}{y^{-3}}\right)^{-2}\left(\dfrac{y^2p^2}{x^3}\right)^{-3}$

18. Simplify. Write the answers with all variables in the denominator.

a) $\left(4^0 x^{-2} y^2 z^3\right)^{-5}$ b) $\left(\frac{4^0 x^5 z^{-2}}{y^3}\right)^{-3}$

19. Use six unit multipliers to convert 21 cubic feet to cubic centimeters.

20. Use nine unit multipliers to convert 44 cubic feet to cubic meters.

Add:

21. $\frac{4}{r^2} + \frac{2q}{r-q} + \frac{3}{r}$

22. $\frac{5}{e+f} - \frac{5}{e}$

23. $\frac{6}{mn} + \frac{3}{m^2} + \frac{3}{m-n}$

24. $\frac{3u}{v^2} + \frac{2}{v-w} - 4$

25. $\frac{6}{b} + \frac{3}{b+c} + 3$

26. The average of the first 3 numbers was 26. The average of the next 12 numbers was 36. What was the overall average of the numbers?

27. The average of the first 7 weights was 26 ounces. The average of the next 8 weights was 31 ounces. The average of the last 5 weights was 38 ounces. What was the overall average of the weights?