1-15 Multiple Choice: questions marked with * require work for credit

1. Which choice demonstrates the correct way to evaluate $6 + 4 \cdot 8 - 3$?
    a. $(6 + 4) \cdot (8 - 3)$ b. $[6 + (4 \cdot 8)] - 3$

    c. $[(6 + 4) \cdot 8] - 3$ d. $6 + [4 \cdot (8 - 3)]$

2. The reciprocal of $\dfrac{1}{5}$ is

    a. -5   b. $-\dfrac{1}{5}$ c. $\dfrac{1}{25}$ d. 5

3. *Opposite* means the same as
    a. additive inverse   b. additive identity

    c. reciprocal   d. zero product

*4. Which statement is false?
    a. $4^0 = 6^0$ b. $3^4 = 9^2$

    c. $3 \cdot 2^0 = 1$ d. $(4^2)^3 = (4^3)^2$

*5. $3\sqrt{48} + 11\sqrt{75} =$
    a. $33\sqrt{48}$ b. $72\sqrt{5}$

    c. $67\sqrt{3}$ d. $81\sqrt{2}$

*6. Express 9.19×10^{-5} in standard form.
    a. 0.0000919   b. 0.00000919

    c. 0.00919   d. 919,000

*7. Which inequality is equivalent to $5x - 5 > 15$?
    a. $x > 4$ b. $x < 4$

    c. $x > \dfrac{1}{4}$ d. $x < \dfrac{1}{4}$

*8. Mr. Smith took 55 minutes to drive into the city and back. He took 5 minutes less for the return trip than for the drive into the city. How long did his return trip take?

a. 20 minutes   b. 30 minutes

c. 25 minutes   d. 35 minutes

*9. What is the value of c so that the line $y = 5x + c$ will pass through the point (3,7)?

a. 8   b. -8   c. 32   d. -32

10. Which is the equation of the line parallel to the x-axis passing through the point (3,-5)?

a. x = 3   b. x = -5   c. y = 3   d. y = -5

*11. Simplify $m - [2 - (2 - m)]$.

a. -4   b. 0   c. $2m - 2$ d. $2m$

*12. What is the result when $-4x + 6$ is subtracted from $8x + 6$?

a. $12x + 12$ b. $12x$

c. $4x + 6$ d. $4x$

*13. Find the sum of $-3x^2 - 4xy + 2y^2$ and $-x^2 + 5xy - 8y^2$.

a. $-2x^2 + xy - 6y^2$ b. $-4x^2 + xy - 6y^2$

c. $-4x^2 - 9xy - 6y^2$ d. $-2x^2 - 9xy + 10y^2$

*14. Which of the following expressions is not equivalent to $\frac{1}{36}$?

a. $6^{-1} \cdot 6^{-1}$ b. $6^{-2} \cdot 6^4$

c. $6^3 \cdot 6^{-5}$ d. $6^{-3} \cdot 6$

*15. Simplify: $(2x + 3)(3x - 5) - [(1 + 2x)(1 - 2x)]$

a. $10x^2 - x - 16$ b. $10x^2 + 7x - 14$

c. $2x^2 - x - 14$ d. $2x^2 - 9x - 16$

16 – 36 Show all work:

16. Evaluate $x[7 - 2y]$ for *x = -5 and y = -3.*

17. Simplify: $2^3 + 16 \div 4 + 4$

18. Name the coefficient, the base, and the exponent: $7(bx)^2$

19. Evaluate $2^{-1} - 3^{-1}$

20. Simplify: $(4x^3)(3x)^2$

21. Simplify: $\dfrac{-6x^5a^2}{2x^2a^3}$

22. Simplify: $\sqrt[3]{729} - \sqrt[3]{-343}$

23. Simplify: $5\sqrt{12} + 7\sqrt{108}$

24. Simplify and express the product in scientific notation:
    $(5.9 \times 10^4)(3.7 \times 10^5)$

25. James earns $2.20 less than twice Greg's hourly wage. If James earns $16.50 per hour, what is Greg's hourly wage? *(Set up an equation and solve)*

26. Solve: $\dfrac{x-3}{2} = \dfrac{x+4}{6}$

27. Solve: $\dfrac{x}{3} - \dfrac{3x}{4} = 5 - \dfrac{5x}{6}$

28. Of four consecutive even numbers, 4 times the smallest minus twice the largest is 4. Find the smallest number. *(Set up an equation and solve)*

29. Solve for x: $ax + n = 5m$

30. On each floor of a building, the ration of offices to windows to doors is 25:55:33. What is the ratio of doors to windows? What is the ratio of doors to offices?

31. Solve the inequality and graph the solution on a number line:
$$3(x + 2) + 11 > 20$$

32. Write the equation of a line in slope-intercept form that passes through the points: $(2 - 5)$ and $(4,0)$.

33. State the slope of the line perpendicular to $4x + 6y = 12$.

34. If $f(x) = 2x + 5$, then what is the value of $f(-9) - f(0)$?

35. Simplify: $(2x - 3)^2$

36. Simplify: $\dfrac{2a^4 - 3a^3 - 4a^2}{-a^2}$