Practice Problems for MTE 3 – Algebra Basics

1. Find the absolute value: $|-3|$
2. Find the absolute value: $|18|$
3. Write in exponential form: $13 \cdot 13 \cdot 13$
4. Write in exponential form: $1 \cdot 1 \cdot 1 \cdot 1 \cdot 1$
5. Evaluate: 2^3
6. Evaluate: 4^2
7. Evaluate: $\sqrt{16}$
8. Perform the indicated operations and simplify: 6 + (-10)
9. Perform the indicated operations and simplify: $\frac{1}{8} - (-\frac{4}{3})$
10. Perform the indicated operations and simplify: -7(-3.1)
11. Perform the indicated operations and simplify: -72 ÷ (-9)
12. Perform the indicated operations and simplify: $-4^2 + 6$
13. Perform the indicated operations and simplify: -5 + (-10) – (-4) – 13
14. Perform the indicated operations and simplify: -32 – 8 ÷ 4 – (-2)
15. Perform the indicated operations and simplify: $2 + \sqrt{4}\,(10 - 2) + 3^2$
16. Write as a decimal number: 10^{-3}
17. Write in scientific notation: 2,061,000,000
18. Write in standard notation: 9.3 X 10^{-2}
19. Identify the property of real numbers that is being illustrated

    a. $3n + 5 = 5 + 3n$
    b. $2x + (y + z) = (2x + y) + z$
    c. $a(b + c) = ab + ac$
    d. $b + -b = 0$
    e. $a + 0 = a$
    f. $a \cdot 1 = a$
    g. $a \cdot \frac{1}{a} = 1$

20. Combine like terms: 19n + 30b − 9b + 4n
21. Simplify completely: 5 + 3(x – 1)
22. Evaluate when x is -5: $x^2 + 2x - 1$
23. In the formula $A = \frac{1}{2} h (B + b)$, find A when h = 10, B =20, and b = 16.
24. Solve: n + 7 = -16

25. Solve: $-\frac{2}{3} + x = -\frac{1}{6}$

26. Solve: $-8x = -72$
27. Solve: $-2.4 + t = 5.6$
28. To obtain her bachelor's degree in nursing, Judy must complete 130 credit hours of instruction. If she has completed 60% of her requirement, how many credits did Judy complete?
29. A factory manufacturing low voltage relays found 4 defective relays in a lot of 80 relays. At this rate, how many defective relays can be expected in a lot of 740 relays?
30. The population of Lewisburg was 10,820. It decreased by 320 each year for 5 consecutive years. What was the population after 5 years?
31. The baggage compartment of a bus is a rectangle prism. The dimensions of the baggage compartment are 8 ft by 4 ft by 6 ft. What is the volume of the compartment? What is the perimeter of the floor? What is the area of the floor?

Volume_____
Perimeter of floor_____
Area of floor_____