Midterm Review - Unit 2

Show all of your work.

1. Write as repeated multiplication, then in standard form.
   a. 4^3

   b. 7^2

   c. $-(-2)^5$

2. Write as a power, then in standard form.

   a. $3 \times 3 \times 3 \times 3 \times 3 \times 3 \times 3 =$

   b. $(-8)\,(-8)\,(-8) =$

   c. $-(2 \times 2 \times 2 \times 2 \times 2 \times 2 \times 2) =$

3. Explain the difference between 5^8 and 8^5.

4. Is the value of -4^2 different from the value of $(-4)^2$? And is the value of -4^3 different from the value of $(-4)^3$?

5. Write each number in standard form.
   a. $(4 \times 10^3) + (7 \times 10^2) + (2 \times 10^1) + (9 \times 10^0) =$

   b. $(3 \times 10^5) + (2 \times 10^2) + (8 \times 10^0) =$

6. Evaluate:

   a. $2^3 + (5 - 2)^4 =$

   b. $100 \div 2 + (4 + 1)^3 =$

   c. $(6^2 + 7^2)^0 - (8^4 + 2^4)^0 =$

7. Identify then correct any errors in the student work below.

$(-2)^2$ X 2^3 – 3^2 ÷ (-3) + $(-4)^2$

$=(-2)^5$ -9 ÷ (-3) + 16

= -32 -3 + 16

= -35 + 16

= -19

8. Write each quotient as a power, then evaluate the power.

a. 7^5 ÷ 7^3

b. $(-10)^9$ ÷ $(-10)^3$

c. $\dfrac{8^4}{8^2}$

9. Write each expression as a product or quotient of powers, then evaluate it.

a. $(3 X 5)^3$

b. $(12 ÷ 3)^5$

c. $[(-4) X 2]^4$

10. Write each expression as a power.

a. $(3^2)^3$

b. $(4^0)^6$

c. $[(-2)^3]^3$

11. Write each expression as a power, then evaluate.

a. $\dfrac{5^5}{5^3 \ X \ 5^2}$

b. $\dfrac{(-4)^3 \ X \ (-4)^6}{(-4)^2 \ X \ (-4)^4}$

c. $\dfrac{10^6 \ X \ 10^0}{10^3 \ x \ 10^2}$

12. Simplify, then evaluate each expression.

a. $2^3 \ X \ 2^2 - 2^0 + 2^4 \div 2^3$

b. $\dfrac{(-2)^3 \ X \ (-2)^2}{(-2)^3 - (-2)^2}$

c. $12^2 \ X \ 12^4 \div (-2)^4 - 12^0$