Unit 2: Exponents and Polynomials Assignment #1

1. Identify the base of each power.

a) 63 b) 27 c) (–5)4 d) –70

base = base = base = base =

2. Use repeated multiplication to show why 35 is not the same as 53.

3. Complete this table.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Power | Base | Exponent | Repeated Multiplication | Result |
| 44 |  |  |  |  |
| (–10)3 |  |  |  |  |
|  | –6 | 2 |  |  |
|  |  |  | 1 × 1 × 1 × 1 × 1 |  |

4. Write each product as a power, then evaluate.

a) 3 × 3 × 3 × 3 × 3 × 3 **b**) 10 × 10 × 10 × 10

c) (–8)(–8)(–8) d) –(–8)(–8)(–8)

5. Write each power as repeated multiplication, then evaluate.

a) 75 b) (–5)5

6. Predict whether each answer is positive or negative, then evaluate.

a) (–3)2 b) (–3)3 c)–32 d) –(–3)3

9. Stamps are sold in a 10 by 10 sheet. The total value of a sheet of stamps is $60.00.

a) Express the number of stamps as a power and in standard form.

b) What is the value of one stamp?

10. Evaluate each power.

a) 40 c) (–6)0 e) –10 f) (–1)0

11. a) Complete this table for a base of 10.

|  |  |  |
| --- | --- | --- |
| Exponent | Power | Standard Form |
| 6 | 106 |  |
| 5 |  |  |
| 4 |  |  |
| 3 |  |  |
| 2 |  |  |
| 1 |  |  |
| 0 |  |  |

b) Use patterns to describe why the power with an exponent of 0 is equal to 1.

12. Evaluate.

a) 52 + 3 b) 5 – 32 **c**) (5 + 3)2 d) 52 – 32

2. Evaluate.

a) 43 × 2 b) 4 ÷ 23 c) (4 × 2)3 d) 43 ÷ 23

3. Evaluate.

a) (18 ÷ 32 + 1)4 – 42 b) 33 ÷ 9(30 – 22) c) (122 + 53)0 – 2[(–3)3]

d) (7 – 5)3 × (8 + 2)4 e) (42 × 15)2 f)[(–3)4 – (–2)3]0 ÷ [(–4)3 – (–3)2]0

4. Insert brackets to make each statement true.

a) 15 ÷ 3 + 2 × 42 – 5 = 43 c) 15 ÷ 3 + 2 × 42 – 5 = 107

5. The formula for the volume, V, of a cylinder with height, h, and radius, r, is V = πr2h.   
Janet made 3 L of salsa and stores it in jars with a radius of 4 cm and a height of 10 cm.   
She uses this expression to determine the number of jars she will need:   
About how many jars will Janet need for the salsa?

6. Aftab, Shane, and Kyra got different answers when they evaluated this expression:  
(–4)2 – 3[(–9) ÷ 3]2 Aftab’s answer was 97, Shane’s answer was 43, and Kyra’s answer was 19.

a) Show the correct solution.

b) Show and explain how one of the students got the wrong answer.