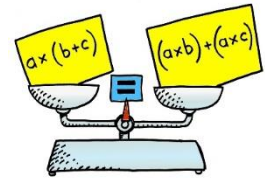


# Pre-Algebra Challenge Problems



## EXPONENTS



Write the following exponents in standard form:

1.  $0.8^2$

2.  $1^{15}$

3.  $0^9$

4.  $8^1$

5.  $\left(\frac{3}{5}\right)^2$

6.  $1.45^4$

7.  $\left(\frac{1}{2}\right)^3$

8.  $\left(\frac{4}{7}\right)^0$



Compare:

1.  $1.8^2$    $0.9^3$

2.  $10 \times 3$    $10^3$

2.  $3^5$    $5^3$

4.  $2.4^3$    $1.4^4$

5.  $0^3$    $3^1$

6.  $\left(\frac{1}{3}\right)^2$    $\left(\frac{1}{4}\right)^3$



Solve:

1.  $\left(\frac{2}{3}\right)^1 \times \left(\frac{1}{5}\right)^3 =$  \_\_\_\_\_

2.  $1^{95} + 6^1 =$  \_\_\_\_\_

3.  $0^{89} - \left(\frac{3}{4}\right)^3 =$  \_\_\_\_\_

4.  $0.1^2 \sim \left(\frac{3}{5}\right)^1 =$  \_\_\_\_\_

5.  $2.3^4 \times 10^4 + 1.5^2 =$  \_\_\_\_\_

6.  $5^5 \div 5^4 \times 10^2 =$  \_\_\_\_\_

# Order of Operations:



Solve.

1.  $5 + ((11 + 42) \times (12 \div 3)) - 20$

2.  $(18 - (43 - 28)) \times 4 + 53 - 24 \div 8$

3.  $77 \div ((74 - 4) \div (2 \times 5)) + 21$

4.  $((10 + 14) \div 6) + ((15 - 33) \div 6) \times 5$



Fill in the blanks using the given numbers.

$$(\quad)^2 + \quad \times \quad = 19$$

5      3      2

$$\quad + (\quad \div \quad)^2 - \quad = 30$$

8      12      7      40

$$\quad - \quad \div \quad + \quad = 22$$

6      32      24      4

$$(\quad)^4 + \quad \times \quad - \quad = 28$$

4      12      36      2

$$\quad \div \quad \times \quad - \quad = 47$$

7      28      13      15

$$\quad + (\quad \div \quad)^3 = 130$$

7      5      35



Fill in the blanks using the given operators.

$$28 \_ 3^3 \_ 4 = 136$$

×     +

$$74 \_ (25 \_ 5)^2 \_ 11 = 60$$

÷     -     +

$$6^3 \_ 3 \_ 21 \_ 3 = 135$$

+     ÷     ×

$$(15 \_ 22) \_ 40 \_ 2 = 117$$

+     ×     +

$$63 \_ (16 \_ 9) = 9$$

-     ÷

$$7^2 \_ 8 \_ 6 \_ 13 = 84$$

+     -     ×

# FACTORS/FACTORING



1. Which of the following numbers are not the factors of 46?

- a) 6      b) 23      c) 4      d) 8      e) 2

2. Which of the following numbers are the factors of 38?

- a) 6      b) 2      c) 13      d) 19      e) 9

3. Which of the following are not the factors of 27?

- a) 4      b) 9      c) 6      d) 3      e) 12



1. Which of the following numbers is a factor of 74 but not a factor of 84?

- a) 14      b) 21      c) 37      d) 42

2. Which of the following number has both 36 and 24 as factors?

- a) 42      b) 72      c) 96      d) 36

3. Which of the following is a factor of 35 but not a factor of 50?

- a) 5      b) 10      c) 7      d) 25



Find the prime factorization of the values below.

525

732

1550

6242

