

# The Natural Numbers: Chapter Test 1

1. What is  $4^3$ ?

a. 12

b. 16

c. 32

d. 64

2. Which expression has an answer of 32?

a.  $4 + 5 \times 3 + 5$

b.  $4 + (4 \times 5) + 8^0$

c.  $4 + 8^1 + 4 \times 5$

d.  $1^6 \times 1^6$

3. Which set of the following numbers has only prime numbers?

a. {7, 11, 97}

b. {9, 51, 99}

c. {13, 57, 67}

d. {1, 3, 5}

4. Calculate

a.  $4 \times 7 + 8 \div 2$

b.  $12 \div 6 \times 8 - 10 \div 2$

5. Match the property with the equation below

1. The neutral element of addition

2. Commutative property of addition

3. Associative property of addition

4. The neutral Element of multiplication

A.  $(4 + 5) + 2 = 4 + (5 + 2)$

B.  $2 + 0 = 0 + 2$

C.  $7 \times 1 = 1 \times 7$

D.  $6 + 8 = 8 + 6$

1.	
2.	
3.	
4.	

6. Given the area of a square equals to  $144 \text{ cm}^2$ , find the length of one side.

7. Write 220 as a product of prime factors using exponential notation.

8. What is the GCF and LCM of 40 and 100?

9. A pentagon (5-sided polygon) has the following side lengths: 45 cm, 28 cm, 63 cm, 50 cm, and 31 cm. What is its perimeter rounded to the nearest hundreds?

**10.** During a Comedy Night fundraiser at Vimont Junior High School, the organizing committee was giving out door prizes.

- Every 7<sup>th</sup> person got a VJHS bookmark.
- Every 15<sup>th</sup> person got a VJHS keychain.
- Every 35<sup>th</sup> person got VJHS T-shirt.

If 250 people attended the Comedy Night, how many of them got all three prizes?

### Extension

- 11.** Meghan is in charge of making goodie bags for the end-of-school-year party. She has 660 gum balls, 396 individually wrapped chocolates and 264 glitter pens. If she wants everyone to get the same amount of gum balls, glitter pens and chocolates, what is the maximum number of bags she can make and how many of each item will each goodie bag contain?
- 12.** Every year Vimont Junior High School puts on a play production. Their auditorium can hold 422 people. This year only 27 seats were not occupied. 217 children tickets were bought at a rate of \$7 per ticket. If the adult ticket costs \$11, what was the profit made from ticket sales? Write the chain of operations for this problem and then solve.

## The Natural Numbers: Chapter Test 2

1. What is the square root of 81?
  - a. 10
  - b. 2
  - c. 9
  - d. 40.5
2. How can we quickly check if a number is divisible by three without a calculator?
  - a. Check that the last number is divisible by three
  - b. Check that the sum of the digits is divisible by three
  - c. Check that the sum of the digits is divisible by thirteen
  - d. Check that the last two digits are divisible by three
3. Calculate
  - a.  $(5 + 10 \times 3^2 - 9^0) + (4 + 8 \div 2)$
  - b.  $\sqrt{36} - \sqrt{9} + 5 \times 2^3$
4. Write the inequalities that describe these statements, using the following symbols:  $<$ ,  $>$ ,  $\leq$  or  $\geq$ 
  - a.  $x$  is less than 4
  - b.  $y$  is greater than or equal to 8
  - c.  $m$  is greater than or equal to 10
  - d.  $b$  is less than or equal to 12
5. What is the prime factorization of 60?
6. Find two natural numbers that fit the following conditions
  - a. The difference is 4 and the product is 60.
  - b. The product is 56 and the sum is 18.
7. Find the LCM of 5 and 8. What is the next common multiple?
8. What is the product of the first 3 prime numbers in the set of natural numbers?

9. Given the following equality find the value of  $x$ . Use a factor tree to help you with this task.

$$128 = 2^x$$

10. Julie wants to buy 3 apps for her iPhone. The first app is \$22. The second app was \$3 more than the first. The third was \$5 less than the first. If Julie has a \$75 gift card, how much would she have left after buying the 3 apps? *Write this situation using a chain of operations and solve.*

### Extension

11. During a Colour-Me-Rad running marathon the coloured balls were given out in the following manner:

- every 20<sup>th</sup> runner received RED
- every 35<sup>th</sup> runner received GREEN
- every 50<sup>th</sup> runner received BLUE
- every 100<sup>th</sup> runner received YELLOW
- every 125<sup>th</sup> runner received PURPLE

How many people received all five colours if 14 000 runners participated in the marathon?  
How many Red, Green and Blue only?

12. One day, Sarah sent out a chain letter to two of her friends. The next day, those two friends each sent the letter to two of their other friends, and the chain letter continued on in this manner. How many people received the chain letter on the 7<sup>th</sup> day? Note that nobody ever receives the letter twice.