9R.7. NUMBER THEORY TOPIC TEST. Name :

(1). Write down the next 3

(a). square numbers 16, 25, ___, ___, ___

(b). triangular numbers

1, 3, 6, 10, 15, ___, ___, ___.

(c). odd numbers

999, ___, ___, ___.

(2). List all the factors of

(a). 63 _____

(b) 24 _____

(c). 100 _____

(3). List the first five multiples of :

(a). 4 _____

(b) 8 _____

(c) 11 _____

(4). Find the Highest Common Factor of : (a). 36 and 48 _____

(b). 60 and 75 _____

(c). 70 and 98 _____

(5). Find the Lowest Common Multiple of (a) 9 and 12 _____

(b). 6 and 8 _____

(c). 20 and 14 _____

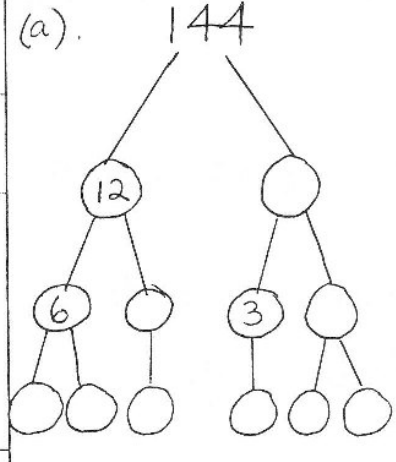
(6).

(a). Write down all prime numbers which are between 10 and 20. _____

(b). Write down all composite numbers which are between 20 and 30. _____

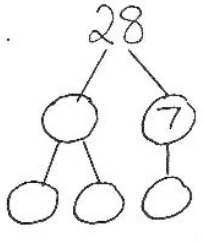
(7). Complete these factor trees.

(a).

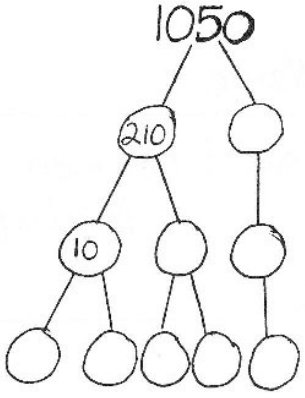


∴ 144 = ___ × ___ × ___ × ___ × ___ × ___

(b).



∴ 28 = ___ × ___ × ___

c). 

$\therefore 1050 = \_\_ \times \_\_ \times \_\_ \times \_\_ \times \_\_$

$= 2 \times 3 \times 5^{\_} \times \_\_$

8). Circle the numbers that are <u>divisible by 3</u>.

60001 , 2301 , 40906 , 1111111

9). Circle the numbers that are <u>divisible by 5</u>.

1000 , 2031 , 690305 , 1777

10). Circle the numbers that are <u>divisible by 11</u>.

4115 , 741806 , 8003, 61809.

11). Find the answers to each of the following

(a). $\sqrt{49}$ _____

(b). $\sqrt{121}$ _____

(c) $\sqrt{625}$ _____

(d) $\sqrt{10000}$ _____

12). Find the answers to each of the following

(a). 5^2 _____

(b). 9^2 _____

(c). 43^2 _____

(d). 260^2 _____

13). Find the answers to each of the following

(a). 2^3 _____

(b). 4^3 _____

(c). 8^3 _____

(d). 15^3 _____

14). Find the answers to each of the following

(a). $\sqrt[3]{27}$ _____

(b). $\sqrt[3]{1000}$ _____

(c) $\sqrt[3]{729}$ _____

(d). $\sqrt[3]{15625}$ _____

YEAR 7 ASSIGNMENT DUE: 15/8 Name:

1. a) $3+4\times2$

b) $8-2+6$

c) $12\div6\times2$

d) $(8+4)\times2$

e) $(3+4)\times(18\div2)$

f) 3^2+4^2

g) $2\times3+4\times5$

h) $(3+2)\times6\div2$

i) $(5+7)^2$

j) $\{[3+2\times5]\times3-9]\div10$

2. Insert brackets to make the following statements true.

a) $3+2\times7=35$

b) $18\div3\times6=1$

c) $7-3+4=0$

d) $2+3\times9\div3=15$

e) $6\div2+4\times3=3$

3. Insert operation signs to make the following statements true (ie $+,-,\times,\div$)

a) 3 4 5 = 2

b) 2 3 4 = 14

c) 1 2 3 = 0

d) 10 2 3 = 15

e) 12 2 3 = 18

4. Simplify.

a) $\sqrt{16}=$ b) $\sqrt[3]{27}=$

c) $3^5=$ d) 5^3

e) $\sqrt{13^2-12^2}=$

5 a) Is 4 a factor of 12?

b) Is 4 a prime number?

c) Is 9 a multiple of 3?

d) Is 9 a square number?

e) Is 6 a triangular number?

6. Write down all the factors of

a) 6

b) 2

c) 12

d) 30.

7. Write down the first 4 multiples of

a) 2

b) 5

c) 7

d) 9

8 Write down all the primes less than 20.

9. Write down the following numbers as the sum of 2 primes

a) 10

b) 18

c) 32

10. Write down the first 6 triangular numbers.

11. Write down the first 6 square numbers

12. Form palindromic numbers from the following numbers. Show <u>all</u> working.

a) 23 b) 73

c) 95 d) 79

13 Find the HCF of

a) 2 and 3

b) 5 and 10

c) 8 and 20

d) 12 and 18

e) 32 and 48

f) 56 and 12

14 Find the LCM of

a) 2 and 3

b) 6 and 10

c) 5 and 15

d) 6 and 9

e) 8 and 12

f) 9 and 12

15 Complete the following factor trees and <u>hence</u> write the numbers in <u>prime factor</u> form. a) 12

12 = _____

b) 16

16 = _____

c) 36

36 = _____

d) 28

28 = _____

e) 54

54 = _____

16. Find the following square roots by first finding factors

a) $\sqrt{784}$ b) $\sqrt{9216}$

17. Write down a prime number greater than 20 with the sum of its digits 11. _____

18 I am a number less than 100. When my digits are reversed I am still a prime number. What am I? _____

19. Evaluate

$6 \times 8 \div 12 + 3 \times 24 - 12 \div 6 + 8$

=

20. What number leaves a remainder of 1 when divided by 2, 3, 4, 5 or 6 and no remainder when divided by 7?