

# Number System Assignment 3.

Even & odd No.

6-15

6.  $x^3 + x^4 = \boxed{3}$

$$\begin{array}{cc} \downarrow & \downarrow \\ 0 & 0 = 0 \end{array}$$

$$0 + 0 = 0$$

$$0 + 0 = 0$$

7.  $xy(y^2 + x^2) \Rightarrow \boxed{1}$

$$\begin{array}{cc} \downarrow & \downarrow \\ 0 & 0 = 0 \end{array}$$

$$0 + 0 = 0$$

$$0 + 0 = 0$$

8.  $11a + 3$  is even  $\boxed{2}$   
 $a \rightarrow \text{odd}$

9.  $17a - 9$  is odd  $\boxed{1}$   
 $a \rightarrow \text{even}$

10.  $\boxed{3}$

11.  $\boxed{1}$

12.  $19a + 22$  is odd  $\Rightarrow \boxed{2}$

13.  $50a - 7$  is odd  $\Rightarrow \boxed{3}$

14.  $a \times b \times c \Rightarrow \text{odd}$

$$\begin{array}{cccc} ab & + & bc & + & ca & + & abc \\ \downarrow & & \downarrow & & \downarrow & & \downarrow \\ \text{odd} & & \text{odd} & & \text{odd} & & \text{odd} \end{array} \Rightarrow \boxed{1}$$

15.  $\text{Even, if sum as above.}$   
 $\text{Even}$

16.

$x, y \rightarrow \text{Even}$      $z \rightarrow \text{odd}$

~~Double~~

$$(x-z)^2 \times y \rightarrow \text{Even} = \text{even true.} \quad \checkmark$$

$$(x-z) \times y^2 \rightarrow \text{odd.}$$

$\downarrow$   
even

$$(x-z) \times y \rightarrow \text{odd.}$$

even

$$(x-y)^2 \times z \rightarrow \text{Even.}$$

even

~~2+9=11~~ 12

17.

$x, y, z$  are even

(i)  $\checkmark$

(ii)  $\times$

(iii)  $\checkmark$  (iv)  $\checkmark$

(b)

18.

$N$  is even No. no.

$$N^3 + 6N^2 + 8N$$

$$N[N^2 + 6N^2 + 8]$$

$$\begin{array}{cccc} \downarrow & \downarrow & \downarrow & \downarrow \\ 2n & 4n & 2 \times 2n & 2^3 \end{array}$$

(c)

$$2^2 \times 2n \times 2$$



19.

a ✓

b ✓

c ✓

d ✗

$n+1, n+3, n+5$  (d)

20.

$$x^4 + 2x^3 + 3x^2 + 4x + 36$$

$\{1, 2, 3, 4, 6, 9, 12, 18, 36\} \Rightarrow 9 \text{ Value}$