

$$1. \quad \begin{array}{c} z \cdot (x+y) \\ \downarrow \quad \downarrow \\ \text{Tek} \quad \text{Tek} \end{array} \rightarrow \text{Tek}$$

	x	y	z
I. durum	T	Ç	T
II. durum	Ç	T	T

$$\begin{array}{l} \text{I. } z + x \cdot y \\ \downarrow \quad \downarrow \quad \downarrow \\ \text{T} \quad \text{T} \cdot \text{Ç} = \text{T} + \text{Ç} = \text{Tek} \\ \text{T} \quad \text{Ç} \cdot \text{T} = \text{T} + \text{Ç} = \text{Tek} \end{array} \quad (\text{Doğru})$$

$$\begin{array}{l} \text{II. } x + y \cdot z \\ \downarrow \quad \downarrow \quad \downarrow \\ \text{T} \quad \text{Ç} \cdot \text{T} = \text{T} + \text{Ç} = \text{Tek} \\ \text{Ç} \quad \text{T} \cdot \text{T} = \text{Ç} + \text{T} = \text{Tek} \end{array} \quad (\text{Doğru})$$

$$\begin{array}{l} \text{III. } y + x \cdot z \\ \downarrow \quad \downarrow \quad \downarrow \\ \text{Ç} \quad \text{T} \cdot \text{T} = \text{Ç} + \text{T} = \text{Tek} \\ \text{T} \quad \text{Ç} \cdot \text{T} = \text{T} + \text{Ç} = \text{Tek} \end{array} \quad (\text{Doğru})$$

O halde I, II ve III her zaman tektir.

$$\begin{array}{l} \text{Tek} = \text{T} \\ \text{Çift} = \text{Ç} \end{array}$$

$$3. \quad \begin{array}{c} (x+y) \cdot z \\ \downarrow \quad \downarrow \\ \text{Tek} \quad \text{Çift} \end{array} \rightarrow \text{Çift} \quad \begin{array}{c} (x+z) \cdot (x+y) \\ \downarrow \quad \downarrow \\ \text{Tek} \quad \text{Tek} \end{array} \rightarrow \text{Tek}$$

$$\begin{array}{l} x+z \rightarrow \text{Tek} \quad x \rightarrow \text{Tek} \\ \downarrow \quad \downarrow \\ \text{T} \quad \text{Ç} \end{array}$$

$$\begin{array}{l} x+y \rightarrow \text{Tek} \quad y \rightarrow \text{Çift} \\ \downarrow \quad \downarrow \\ \text{T} \quad \text{Ç} \end{array}$$

x	y	z
Tek	Çift	Çift

$$\text{I. } x \cdot y \cdot z \\ \text{T} \cdot \text{Ç} \cdot \text{Ç} \rightarrow \text{Çift}$$

$$\text{II. } x + y + z \\ \text{T} + \text{Ç} + \text{Ç} \rightarrow \text{Tek}$$

$$\text{III. } x + y \cdot z \\ \text{T} + \text{Ç} \cdot \text{Ç} \rightarrow \text{Tek}$$

II ve III tek sayıdır.

Cevap: E

Cevap: D

$$2. \quad \frac{8a+36}{a} = \frac{8a}{a} + \frac{36}{a}$$

$$= 8 + \frac{36}{a} \text{ sonucu tek olmalı}$$

36 sayısının tam bölen pozitif tam sayılar

$$a = 1, 2, 3, 4, 6, 9, 12, 18, 36$$

bu koşulu sağlayan değerlerin toplamı

$$4 + 12 + 36 = 52 \text{ bulunur.}$$

Cevap: E

4. En çok olabilmesi için küçük sayılara basar

$$\text{Mavi} \rightarrow \text{Ç} \cdot \text{Ç} \rightarrow 2, 4$$

$$\text{Yeşil} \rightarrow \text{Ç} \cdot \text{T} \rightarrow 6, 1$$

$$\text{Kırmızı} \rightarrow \text{T} \cdot \text{T} \rightarrow 3, 5$$

Basılmayan numaralar, 7, 8 ve 9

Bunların toplamı $7 + 8 + 9 = 24$ bulunur.

Cevap: E

5. Tek ve çift sayılarda işlem yaparken çift katsayıları sıfır tek kat sayıları bir gibi düşünüyoruz.

O halde

$$\begin{array}{l} a + 7b \rightarrow a + b \\ 4a + 5b \rightarrow b \\ 5a + b \rightarrow a + b \end{array} \left. \vphantom{\begin{array}{l} a + 7b \\ 4a + 5b \\ 5a + b \end{array}} \right\} \text{aynı yani bunlar tek}$$

b çift olur. b çift ise a + b toplamından a tek olur.

I. a.b

$$T \cdot \text{Ç} \rightarrow \text{Çift}$$

II. 4a + b

$$\text{Ç} + \text{Ç} \rightarrow \text{Çift}$$

III. a + b

$$T + \text{Ç} \rightarrow \text{Tek}$$

I ve II çift olur.

Cevap: D

7. $c \cdot (a + b) \rightarrow \text{Tek}$

$$\begin{array}{c} \downarrow \quad \downarrow \\ T \quad T \end{array}$$

Tablo yapalım

	a	b	c			
I. durum	Ç	T	T	a = 2	b = 3	c = 3 alalım
II. durum	T	Ç	T	a = 3	b = 2	c = 3 alalım

$$I. c^a + b = 3^2 + 3 = 9 + 3 = 12 \quad (\text{Çift})$$

$$3^3 + 2 = 27 + 2 = 29 \quad (\text{Tek})$$

$$II. b^c + a = 3^3 + 2 = 27 + 2 = 29 \quad (\text{Tek})$$

$$2^3 + 3 = 8 + 3 = 11 \quad (\text{Tek})$$

$$III. a^b + c = 2^3 + 3 = 8 + 3 = 11 \quad (\text{Tek})$$

$$3^2 + 3 = 9 + 3 = 12 \quad (\text{Çift})$$

O halde yalnız II her zaman tek sayıdır.

Cevap: B

6. Tablo yapalım

a	b	c	
Ç	Ç	T	
Ç	T	T	olmaz
T	Ç	Ç	olmaz

O halde a → çift b → Çift ve c → Tek sayıdır.

I ve III doğrudur.

Cevap: C

8. $a^2 + a \cdot b + a + b = a(a + b) + (a + b)$

$$= \underbrace{(a + b)}_{\text{Tek}} \underbrace{(a + 1)}_{\text{Tek}} \rightarrow \text{Tek}$$

$$a + 1 \rightarrow \text{Tek}$$

$$\downarrow \\ \text{Çift}$$

$$a + b \rightarrow \text{Tek}$$

$$\downarrow \quad \downarrow \\ \text{Çift} \quad \text{Tek}$$

$$I. a \text{ Çift} \quad (\text{Doğru})$$

$$II. b \text{ Çift} \quad (\text{Yanlış})$$

$$III. a^2 - b^2 \rightarrow \text{Çift} - \text{Tek} = \text{Tek} \quad (\text{Doğru})$$

O halde I ve III doğrudur.

Cevap: C

$$9. \quad x.y - y = y \cdot (x-1) \rightarrow \text{Tek}$$

$$\begin{array}{c} \downarrow \quad \downarrow \\ \text{Tek} \quad \text{Tek} \end{array}$$

$$x-1 \rightarrow \text{Tek ise } x \text{ çift olur.}$$

$$I. \quad \begin{array}{c} \underline{x} \cdot \underline{y} - \underline{x} \\ \text{Çift} \quad \text{Çift} = \text{Çift} \end{array}$$

$$II. \quad \begin{array}{c} (x-1)^2 \rightarrow \text{Tek} \\ \text{Tek} \end{array}$$

$$III. \quad \begin{array}{c} x^2 + x.y + y^2 \\ \downarrow \quad \downarrow \quad \downarrow \\ \text{Çift} + \text{Çift} + \text{Tek} = \text{Tek} \end{array}$$

II ve III tek sayılardır.

$$10. \quad (x-y) \cdot z \rightarrow \text{Tek}, \quad y \cdot z \rightarrow \text{çift olsa}$$

$$\begin{array}{c} \underline{(x-y)} \cdot \underline{z} \\ \text{T} \quad \text{T} \end{array} \quad \begin{array}{c} \underline{y} \cdot \underline{z} \\ \text{Ç} \quad \text{T} \end{array}$$

$$\begin{array}{c} \boxed{x \rightarrow \text{Tek}} \\ y \rightarrow \text{Çift} \\ \boxed{z \rightarrow \text{Tek}} \end{array} \quad \begin{array}{c} x-y \rightarrow \text{Tek} \\ \downarrow \quad \downarrow \\ \text{T} \quad \text{Ç} \end{array}$$

$$ii) \quad \begin{array}{c} (x-y) \cdot z \rightarrow \text{Çift} \\ \downarrow \quad \downarrow \\ \text{Ç} \quad \text{T} \end{array} \quad \begin{array}{c} y \cdot z \rightarrow \text{Tek olsa} \\ \downarrow \quad \downarrow \\ \text{T} \quad \text{T} \end{array}$$

$$\begin{array}{c} x-y \rightarrow \text{Çift} \\ \downarrow \quad \downarrow \\ \text{T} \quad \text{T} \end{array} \quad \text{bu durumda}$$

$$\boxed{x \rightarrow \text{Tek}} \quad y \rightarrow \text{Tek} \quad \boxed{z \rightarrow \text{Tek}}$$

her iki durumda

$$x \rightarrow \text{Tek}$$

$$z \rightarrow \text{Tek olmakta}$$

Cevap: E

11.

4	D	C	$\rightarrow 4 + \text{D} + \text{C} = \text{Tek}$
B	7	A	
E	3	2	$\rightarrow \text{E} + 3 + 2 = \text{Tek ise}$

$4 + \text{B} + \text{E} = \text{Tek}$ $\text{B} + 7 + \text{A} = \text{Tek}$

$\text{E} + 3 + 2 = \text{Tek ise}$

$$A \rightarrow \text{Tek}, \quad B \rightarrow \text{Tek}, \quad C \rightarrow \text{Çift}, \quad D \rightarrow \text{Tek}, \quad E \rightarrow \text{Çift}$$

$$I. \quad B + C \rightarrow \text{Tek}$$

$$\begin{array}{c} \downarrow \quad \downarrow \\ \text{T} \quad \text{Ç} \end{array}$$

$$II. \quad A + E \rightarrow \text{Tek}$$

$$\begin{array}{c} \downarrow \quad \downarrow \\ \text{T} \quad \text{Ç} \end{array}$$

$$III. \quad D + B \rightarrow \text{Çift}$$

$$\begin{array}{c} \downarrow \quad \downarrow \\ \text{T} \quad \text{T} \end{array}$$

Yalnız III çift

Cevap: C

$$12. \quad \bullet \quad \begin{array}{c} \boxed{4a} + b \rightarrow \text{Çift} \\ \downarrow \quad \downarrow \\ \text{Çift} \quad \text{Çift} \end{array}$$

$$\bullet \quad \begin{array}{c} \boxed{3b} + \boxed{c} \rightarrow \text{Çift} \\ \downarrow \quad \downarrow \\ \text{Çift} \quad \text{Çift} \end{array}$$

Tablo yapalım:

a	b	c
T	Ç	Ç
Ç	Ç	Ç

$$I. \quad \begin{array}{c} a + b \\ \downarrow \quad \downarrow \\ \text{T} \quad \text{Ç} \rightarrow \text{T} \\ \text{Ç} \quad \text{Ç} \rightarrow \text{Ç} \end{array} \left. \vphantom{\begin{array}{c} a + b \\ \downarrow \quad \downarrow \\ \text{T} \quad \text{Ç} \rightarrow \text{T} \\ \text{Ç} \quad \text{Ç} \rightarrow \text{Ç} \end{array}} \right\} \text{ olmaz}$$

$$II. \quad \begin{array}{c} \boxed{4a} + b - c \\ \downarrow \quad \downarrow \quad \downarrow \\ \text{Ç} \quad \text{Ç} \quad \text{Ç} \rightarrow \text{Çift olur.} \end{array}$$

$$III. \quad \begin{array}{c} a \cdot b \cdot c \\ \downarrow \quad \downarrow \quad \downarrow \\ \text{T} \cdot \text{Ç} \cdot \text{Ç} \rightarrow \text{Ç} \\ \text{Ç} \cdot \text{Ç} \cdot \text{Ç} \rightarrow \text{Ç} \end{array} \left. \vphantom{\begin{array}{c} a \cdot b \cdot c \\ \downarrow \quad \downarrow \quad \downarrow \\ \text{T} \cdot \text{Ç} \cdot \text{Ç} \rightarrow \text{Ç} \\ \text{Ç} \cdot \text{Ç} \cdot \text{Ç} \rightarrow \text{Ç} \end{array}} \right\} \text{ Çift olur.}$$

O halde her zaman II ve III çift olur.

Cevap: E

Cevap: D