

30 GÜNDE DGS
TEK.
18. GÜN

- *Denklem Çözme*
- 

9. i) $x \cdot y = 5$ ii) $y - x - z = 0$

$$\begin{array}{r} + \\ y \cdot z = 4 \\ \hline y(x+z) = 9 \end{array} \quad y = x + z$$

$y \cdot y = 9 \Rightarrow y^2 = 9$
 $y = 3$ olur.

$x \cdot y = 5$, $y \cdot z = 4$
 $x \cdot 3 = 5$ $3 \cdot z = 4$
 $x = \frac{5}{3}$ $z = \frac{4}{3}$

O halde;
 $x \cdot y \cdot z = \frac{5}{3} \cdot 3 \cdot \frac{4}{3} = \frac{20}{3}$ bulunur.

Cevap: E

10. • $\frac{x}{y+z} = \frac{9}{4} \Rightarrow 4x = 9(y+z)$
 $\frac{4x}{9} = y+z$ olur.

• $x \cdot y + x \cdot z = 36$
 $x(y+z) = 36$
 $x \cdot \frac{4x}{9} = 36 \Rightarrow 4x^2 = 9 \cdot 36$
 $x^2 = 81$
 $x = 9$ olur.

• $\frac{4x}{9} = y+z \Rightarrow \frac{4 \cdot 9}{9} = y+z$
 $y+z = 4$ olur.

O halde; $x + y + z = 9 + 4 = 13$ olur.

Cevap: D

11. • $x + y = 1$ • $xy - yz = 12$ • $x + y = 1$
 $-\frac{y+z=6}{x-z=-5}$ $y(x-z) = 12$ $x - \frac{12}{5} = 1$
 $y \cdot (-5) = 12$ $x = 1 + \frac{12}{5}$
 $y = \frac{-12}{5}$ $x = \frac{17}{5}$

$\Rightarrow x + \frac{y+z}{6} = \frac{17}{5} + 6 = \frac{47}{5}$

Cevap: E

12. $x \cdot z = 3$
 $+ y \cdot z = 6$
 $xz + yz = 9$
 $z(x+y) = 9 \Rightarrow 4z^2 = 9$
 $4z \quad z^2 = \frac{9}{4}$
 $z = \frac{3}{2}$
 $\Rightarrow x + y = 4 \cdot \frac{3}{2} = 6$
 $\Rightarrow x + y + z = 6 + \frac{3}{2} = \frac{15}{2} = 7,5$

Cevap: B

13. $a^2 - bc = 11$
 $- b^2 + ac = 7$
 $a^2 - b^2 - bc - ac = 4$
 $(a-b)(a+b) - c(a+b) = 4$
 $(a+b)(a-b-c) = 4 \Rightarrow a+b = 1$

Cevap: A

14. • $\frac{x+y+z}{x+1} = 3$

$$x + y + z = 3x + 3 \Rightarrow y + z = 2x + 3 \text{ olur.}$$

• $4x - y = 3 + z$

$$4x = 3 + y + z \quad (y + z = 2x + 3)$$

$$4x = 3 + 2x + 3$$

$$4x - 2x = 6$$

$$2x = 6$$

$$x = 3 \text{ olur.}$$

Cevap: B

15. 2, 3, 5, 7 asal sayılarıyla oluşturulabilecek

$$2.5=10$$

$$2.7=14$$

$$3.5=15$$

$$3.7=21$$

$$5.7=35$$

$$5.5=25$$

$$7.7=49$$

sayıları Tekil Sayılar'dır.

O halde 7 farklı tekil sayı vardır.

Cevap: B

16. Birinci denklem 5 ile çarpılıp iki denklem taraf tarafa toplanırsa;

$$5/x - \frac{y}{5} = 3$$

$$+ y - \frac{x}{5} = -3$$

$$5x - \frac{x}{5} = 12$$

$$\frac{24x}{5} = 12$$

$$x = \frac{5}{2}$$

Bu değer birinci denklemde yerine yazıldığında;

$$\frac{5}{2} - \frac{y}{5} = 3$$

$$\frac{y}{5} = -\frac{1}{2}$$

$$y = -\frac{5}{2} \text{ olarak bulunur.}$$

Buna göre, $x + y = 0$ 'dır.

Cevap: D

17. • $x + ky = 11 \Rightarrow 3 + 2k = 11$

$$2k = 8$$

$$k = 4$$

• $2x - my = 4 \Rightarrow 2 \cdot 3 - 2m = 4$

$$2 = 2m$$

$$1 = m$$

Cevap: B

18. $a + b = 2.c$

$$+ \quad b + c = 2.a$$

$$a + c + 2b = 2a + 2c$$

$$2b = a + c$$

$$2b = 58$$

$$b = 29$$

Cevap: B

19. $\frac{2b}{a + \frac{1}{b}} - \frac{3a}{b + \frac{1}{a}} = \frac{15a^2}{ab + 1}$

$$\frac{2b}{\frac{ab+1}{b}} - \frac{3a}{\frac{ab+1}{a}} = \frac{15a^2}{ab+1}$$

$$\frac{2b^2-3a^2}{ab+1} = \frac{15a^2}{ab+1}$$

$$2b^2 - 3a^2 = 15a^2$$

$$2b^2 = 18a^2$$

$$b^2 = 9a^2 \Rightarrow b = 3a \text{ ve } \frac{a}{b} = \frac{a}{3a} = \frac{1}{3} \text{ olur.}$$

Cevap: D

20. $a.a = 2a + 3$

$$a^2 - 2a - 3 = 0$$

a	-3
a	+1

$$(a - 3)(a + 1) = 0 \Rightarrow \boxed{a = 3}$$

$b.b = 2b + 8$

$$b^2 - 2b - 8 = 0$$

b	-4
b	+2

$$(b - 4)(b + 2) = 0 \Rightarrow \boxed{b = 4}$$

$c.c = 4c + 5$

$$c^2 - 4c - 5 = 0$$

c	-5
c	+1

$$(c - 5)(c + 1) = 0 \Rightarrow \boxed{c = 5}$$

$e = 2a = 6$ $e + f - 9$
 $f = 2b = 8$ $= 6 + 8 - 10 = 4$
 $g = 2c = 10$

Cevap: C

21. $\left. \begin{array}{l} a.b = 14 \\ a.c = 20 \end{array} \right\} \begin{array}{l} b = \frac{14}{a} \\ c = \frac{20}{a} \end{array} \Rightarrow \begin{array}{l} 3a + 2 \cdot \frac{14}{a} + \frac{20}{a} = 24 \\ 3a + \frac{48}{a} = 24 \\ a + \frac{16}{a} = 8 \\ a^2 + 16 = 8a \\ a^2 - 8a + 16 = 0 \\ (a - 4)^2 = 0 \\ a - 4 = 0 \\ a = 4 \end{array}$

Cevap: B

22. $x.y - 4 = 3y \Rightarrow x.y = 3y + 4$

$$\frac{x}{\frac{1}{y}} + \frac{4}{y} = 2 \Rightarrow \frac{x.y + 4}{y} = 2$$

$$x.y + 4 = 2y$$

$$3y + 4 + 4 = 2y$$

$$y = -8$$

Cevap: E

23. $\frac{m}{1 + \frac{m}{n}} + \frac{n}{1 + \frac{n}{m}} = \frac{10}{3} \Rightarrow \frac{m}{\frac{n+m}{n}} + \frac{n}{\frac{m+n}{m}} = \frac{10}{3}$

$$\Rightarrow \frac{m.n}{n+m} + \frac{m.n}{n+m} = \frac{10}{3} \Rightarrow \frac{2.m.n}{n+m} = \frac{10}{3}$$

$$\Rightarrow \frac{m.n}{n+m} = \frac{5}{3} \Rightarrow \frac{m+n}{n.m} = \frac{3}{5}$$

Cevap: C

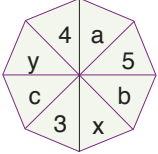
24. $\frac{a-1}{b} = \frac{c}{a} \Rightarrow a.(a-1) = b.c$

$\frac{a}{c-2} = \frac{b+3}{a-1} \Rightarrow a.(a-1) = bc - 2b + 3c - 6$

$\Rightarrow bc = bc - 2b + 3c - 6$

$3c - 2b = 6$

Cevap: B

25. 

- $4 + a + 5 + b = 20$
 $a + b = 11$
- $a + 5 + b + x = 20$
 $11 + 5 + x = 20$
 $x = 4$
- $5 + b + x + 3 = 20$
 $5 + b + 4 + 3 = 20$
 $b = 8 \Rightarrow a = 3$
- $y + 4 + a + 5 = 20$
 $y + 4 + 3 + 5 = 20$
 $y = 8$

O halde $y - x = 8 - 4$
 $= 4$ bulunur.

Cevap: C

26. $\begin{array}{l} m + n = 15mn \\ + m - n = 3mn \\ \hline 2m = 18n \\ m = 9n \end{array}$

$n = \frac{2}{18} = \frac{1}{9}$ olur.

$m + \frac{1}{9} = 15m \cdot \frac{1}{9}$

$\frac{9m+1}{9} = \frac{15m}{9} \Rightarrow 6m = 1$ ve $m = \frac{1}{6}$ olur.

O halde $m.n = \frac{1}{6} \cdot \frac{1}{9} = \frac{1}{54}$ olur.

Cevap: A

27. $K_{n+2} - K_{n+1} = 76$

$(n+2)(n+3) - (n+1)(n+2) = 76$

$n^2 + 5n + 6 - (n^2 + 3n + 2) = 76$

$2n + 4 = 76$

$2n = 72$

$n = 36$

Cevap: C

28. $\bullet \frac{1}{a} = b + 3 \Rightarrow 1 = ab + 3a$
 $ab = 1 - 3a$

$\bullet \frac{4}{2-b} = a \Rightarrow 4 = 2a - ba$
 $ab = 2a - 4$

$\Rightarrow 2a - 4 = 1 - 3a$

$5a = 5$

$a = 1$

Cevap: B

29. $\frac{1}{x+y-2} + \frac{1}{x-y-4} = 1$

$x + y - 2 = 2 \quad \rightarrow 5 + y - 2 = 2 \Rightarrow y = -1$

$+ \quad x - y - 4 = 2$

$2x - 6 = 4$

$2x = 10$

$x = 5$

$\Rightarrow x \cdot y = 5 \cdot -1 = -5$

Cevap: B

30. $(x+5)^2 + |x-y+9| + \sqrt{2y-3z+13} = 0$

$\bullet x+5 = 0 \quad \bullet x-y+9 = 0 \quad \bullet 2y-3z+13 = 0$

$x = -5 \quad -5-y+9 = 0 \quad 8-3z+13 = 0$

$y = 4 \quad z = 7$

$\Rightarrow x + y + z = -5 + 4 + 7 = 6$

Cevap: C

$$\begin{aligned}
 31. \quad & -/ \triangle + \bullet = 11 \quad \rightarrow \quad 4 + \bullet = 11 \\
 & + 2\triangle + \bullet = 15 \quad \bullet = 7 \\
 \hline
 & \triangle = 4
 \end{aligned}$$

$$\begin{aligned}
 \bullet \square + 2\triangle &= 17 \quad \rightarrow \quad \square + 8 = 17 \\
 & \square = 9
 \end{aligned}$$

Cevap: E

$$\begin{aligned}
 32. \quad & b = \frac{4a-3}{a-1} \\
 & ba - b = 4a - 3 \\
 & ba - 4a = b - 3 \\
 & a(b-4) = b-3 \\
 & a = \frac{b-3}{b-4}
 \end{aligned}$$

Cevap: A

$$\begin{aligned}
 33. \quad & \sqrt{x} \cdot \sqrt{y} = \frac{4}{3} \\
 & x \cdot \frac{\sqrt{y}}{\sqrt{x}} = 2 \\
 \hline
 & \sqrt{x} \cdot \sqrt{y} \cdot \frac{\sqrt{y}}{\sqrt{x}} = \frac{8}{3} \Rightarrow y = \frac{8}{3} \\
 & \Rightarrow \sqrt{y} = 2\sqrt{x} \Rightarrow y = 4x \Rightarrow \frac{8}{3} = 4x \\
 & \quad \quad \quad x = \frac{2}{3} \\
 & \text{O halde } x + y = \frac{8}{3} + \frac{2}{3} = \frac{10}{3}
 \end{aligned}$$

Cevap: B

$$34. \quad \frac{1}{\sqrt{x} + \sqrt{y}} + \frac{1}{\sqrt{x} - \sqrt{y}} = 3$$

$$\frac{\sqrt{x} - \sqrt{y} + \sqrt{x} + \sqrt{y}}{x - y} = 3$$

$$\frac{2\sqrt{x}}{6} = 3 \Rightarrow 2\sqrt{x} = 18$$

$$\sqrt{x} = 9$$

$$x = 81 \text{ olur.}$$

Cevap: E

35.

$$\begin{aligned}
 \bullet \quad & (x+m)(y+z) = xy + xz + my + mz \\
 & \quad \quad \quad = 2 + xz + my + 4
 \end{aligned}$$

$$\begin{aligned}
 \bullet \quad & \frac{y}{z} = 3 \Rightarrow y = 3z \\
 & x \cdot y = 2 \Rightarrow 3xz = 2 \Rightarrow \boxed{xz = \frac{2}{3}}
 \end{aligned}$$

↓

$$3z$$

$$\bullet \quad \frac{y}{z} = 3$$

$$x \quad z \cdot m = 4$$

$$\boxed{ym = 12}$$

$$\Rightarrow 2 + xz + my + 4 = 2 + \frac{2}{3} + 12 + 4 = 18 + \frac{2}{3} = \frac{56}{3}$$

Cevap: B

$$36. \quad a + b = 72 - \sqrt{4ab}$$

$$a + b + \sqrt{4ab} = 72$$

$$a + b + 2\sqrt{ab} = 72$$

$$\left. \begin{aligned} \sqrt{a} + \sqrt{b} &= 6\sqrt{2} \\ \sqrt{a} - \sqrt{b} &= 4\sqrt{2} \end{aligned} \right\} \Rightarrow \sqrt{a} = 5\sqrt{2} \Rightarrow a = 50$$

$$\sqrt{b} = \sqrt{2} \Rightarrow b = 2$$

$$a \cdot b = 100$$

Cevap: D