

ORAN - ORANTI RATIO - PROPORTION

✓ En az iki oranlı eşitliklere orantı denir.

● $\frac{a}{b} = \frac{c}{d} = k \rightarrow$ Orantı sabiti ● $\frac{a}{b} = \frac{c}{d} = \frac{e}{f} = k$

● $\frac{a}{b} = \frac{c}{d} \Leftrightarrow a : b = c : d$
içler
dışlar

● $\frac{a}{b} = \frac{c}{d} = k$

● $\frac{a}{b} = \frac{c}{d} = \frac{e}{f} = k$

$\frac{a \cdot c}{b \cdot d} = k^2$

$\frac{a \cdot c \cdot e}{b \cdot d \cdot f} = k^3$

● $\frac{a}{b} = \frac{c}{d} \Rightarrow$ $\left\{ \begin{array}{l} \frac{a}{c} = \frac{b}{d} \Rightarrow \text{içler yer deęiřtirebilir.} \\ \frac{d}{b} = \frac{c}{a} \Rightarrow \text{dışlar yer deęiřtirebilir.} \\ \frac{d}{c} = \frac{b}{a} \Rightarrow \text{hem içler hem dışlar} \\ \text{yer deęiřtirebilir.} \end{array} \right.$

● $\frac{a}{b} = \frac{c}{d} = k \Rightarrow a \cdot d = b \cdot c$

içler ile dışlar çarpımı eşittir.

● $\frac{a}{b} = \frac{c}{d} = \frac{e}{f} = k$

$a = b \cdot k, \quad c = d \cdot k, \quad e = f \cdot k$

● $\frac{a}{b} = \frac{c}{d} = \frac{e}{f} = k \Rightarrow \frac{a+c+e}{b+d+f} = k$

● $\frac{a}{b} = \frac{c}{d} = k \Rightarrow \frac{m \cdot a}{m \cdot b} = \frac{n \cdot c}{n \cdot d} = k$

$\frac{m \cdot a + n \cdot c}{m \cdot b + n \cdot d} = k$

1. $-5 \cdot (-3) - 2[-12 - (-2)] = ?$

- A) 12 B) 18 C) 26 D) 35 E) 41

2. $\frac{a}{3} = b = \frac{c}{8}$

$2c - 3a - 5b = 18$

$\Rightarrow b = ?$

- A) 9 B) 8 C) 7 D) 6 E) 5

3. $\frac{x}{0,3} = \frac{y}{0,5} = \frac{z}{0,7}$

$z - x - y = 10$

$\Rightarrow x + y + z = ?$

- A) -10 B) -30 C) -60 D) -90 E) -150

4. $(x : 20 : 14) = (3 : y : 7)$

$\Rightarrow x + y = ?$

- A) 9 B) 11 C) 16 D) 18 E) 21

5. $\frac{a}{2} = \frac{b}{3} = \frac{c}{5}$

$\Rightarrow \frac{a+c}{c-2b} = ?$

- A) -7 B) -6 C) -5 D) -3 E) -1

6. $\frac{3}{7} + \frac{1}{4} : \frac{6 - \frac{1}{2}}{5 + \frac{1}{2}} = ?$

- A)
- $\frac{19}{28}$
- B)
- $\frac{10}{7}$
- C)
- $\frac{11}{14}$
- D)
- $\frac{4}{11}$
- E)
- $\frac{11}{9}$

7. $\frac{(2 - \frac{1}{3} - \frac{5}{2}) : \frac{1}{12}}{2\frac{1}{2}} = ?$

- A) -4 B) -2 C) -1 D)
- $\frac{5}{2}$
- E) 12

8. $\left. \begin{array}{l} 2x + 3 = 3y \\ y + 1 = 2z \\ z + x = 5 \end{array} \right\} \Rightarrow x = ?$

- A) 3 B) 4 C) 6 D) 8 E) 9

9. $\frac{x-4}{x-2} + x + 3 = \frac{2}{2-x}$
 $\Rightarrow x = ?$

- A) 0 B) -1 C) -2 D) -3 E) -4

10. $\frac{x+1}{x-1} = \frac{4}{3}$
 $1 - \frac{1}{x-1} = \frac{4}{3}$
 $\Rightarrow x = ?$

- A) 7 B) 8 C) 9 D) 10 E) 11

11. $a, b \in \mathbb{R}, (2a - b) \in \mathbb{Z}$
 $-1 < a < 3$
 $2 < b < 4$
 $\Rightarrow \min(2a - b) = ?$

- A) -5 B) -4 C) -3 D) -2 E) -1

12. $a^2 < a$
 $a \cdot b > 0$
 $a \cdot c < 0$
 $\Rightarrow a, b, c = ?, ?, ?$

- A) +, +, + B) -, +, + C) +, -, -
D) +, +, - E) -, -, -

13. $x \in \mathbb{Z}$

$$|x-2| + |2-x| \leq 6$$

$$\Rightarrow \sum x = ?$$

- A) 15 B) 14 C) 13 D) 12 E) 11

14. $||2x-1|-3| < 6$

$$\Rightarrow \text{Ç.K. (S.S.)} = ?$$

- A) (0,5) B) (-1, 7) C) (-5, 4)
D) (-3, 6) E) (-4, 5)

15. $|x-2| \cdot |x+3| \leq 0$

$$\Rightarrow \prod x_i = ?$$

- A) 6 B) 1 C) 0 D) -1 E) -6

16. $\left(2^{n+1} \cdot \frac{1}{5^n}\right)^n = 320$

$$\Rightarrow n = ?$$

- A) 1 B) 2 C) 3 D) 4 E) 5

17. $\frac{0,35 \cdot 10^{-2} + 4,5 \cdot 10^{-3}}{0,016} = ?$

- A) 0,1 B) 0,2 C) 0,5 D) 1 E) 2

18. $a^3 \cdot b^2 = 8$

$a^2 \cdot b^3 = 4$

$\Rightarrow b = ?$

- A) 1 B) 2 C) 3 D) 4 E) 5

19. $\sqrt[4]{\frac{1}{32}} : \sqrt[4]{\frac{1}{32}} : \sqrt[4]{\frac{1}{32}} : \dots = ?$

- A) $\frac{1}{2}$ B) $\frac{2}{3}$ C) $\frac{3}{4}$ D) $\frac{5}{6}$ E) $\frac{4}{7}$

20. $\frac{\sqrt{3} + \sqrt{15} - \sqrt{2} - \sqrt{10}}{\sqrt{3} - \sqrt{2}} : \frac{1}{\sqrt{5} - 1} = ?$

- A) 3 B) 4 C) 5 D) 6 E) 7

21. $\frac{\sqrt{10} + \sqrt{6}}{\sqrt{15} + \sqrt{10} + \sqrt{6} + 3} = ?$

- A) $6 + \sqrt{3}$ B) $2\sqrt{3} - 4\sqrt{2}$ C) $\sqrt{5} - 2\sqrt{2}$
D) $4 + \sqrt{2}$ E) $\sqrt{6} - 2$

22. $\frac{1}{1 + \sqrt{2}} + \frac{1}{\sqrt{2} + \sqrt{3}} + \frac{1}{\sqrt{3} + \sqrt{4}} + \dots + \frac{1}{\sqrt{15} + \sqrt{16}} = ?$

- A) 1 B) 2 C) 3 D) 4 E) 5

23. $\frac{\sqrt{\sqrt{2}-1}}{\sqrt{\sqrt{2}+1}} - \frac{2}{\sqrt{2}} = ?$

- A) $\sqrt{2} + 2$ B) $2 - \sqrt{2}$ C) $\sqrt{2}$
D) -1 E) 1

24. $a^3 + 3ab^2 = 130$

$3a^2b + b^3 = 66$

$\Rightarrow a - b = ?$

- A) 3 B) 4 C) 5 D) 6 E) 7

25. $x + \frac{1}{x} = 7$
 $\Rightarrow \frac{x^2 + 1}{x^2} = ?$

- A) 47 B) 48 C) 49 D) 50 E) 51

26. $\frac{x^2 - 4}{x^2 - x - 2} : \frac{x^2 - 1}{(x+1)^2} = ?$
 A) $\frac{x-2}{x+1}$ B) $\frac{x-2}{x-1}$ C) $\frac{x+2}{x-1}$
 D) $\frac{x+2}{x+1}$ E) 1

27. $x \cdot y = 3$
 $\frac{1}{x^2} + \frac{1}{y^2} = 5$
 $\Rightarrow x + y = ?$

- A) $\sqrt{51}$ B) $2\sqrt{5}$ C) 7 D) $4\sqrt{3}$ E) $\sqrt{47}$

28. $n(A \cup B) = 5$
 $n[(A \cup B)'] = 4$
 $\Rightarrow n(E) = ?$

- A) 7 B) 8 C) 9 D) 10 E) 11

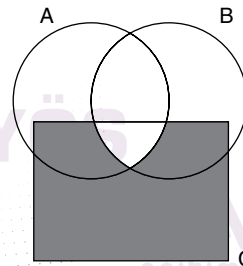
29. $n(E) = 20$
 $n[(A \cup B)'] = 8$
 $n(B) = 6$
 $\Rightarrow n(A \setminus B) = ?$

- A) 6 B) 7 C) 8 D) 9 E) 10

30. $n(A \setminus B') = 3$
 $n(A \cap B') = 4$
 $n(B) = 9$
 $\Rightarrow n(A \cup B) = ?$

- A) 16 B) 15 C) 14 D) 13 E) 12

31.



Taralı bölge = ?

- A) $(A \cap B) \cup C$ B) $C \setminus (A \cup B)$ C) $C \cup (A \cup B)$
 D) $C \cap (A \cup B)$ E) $C \setminus (A \cap B)$

32. $2 \cdot f^{-1}(x) + 4x = x \cdot f^{-1}(x) + 3$

$\Rightarrow f(x) = ?$

A) $\frac{2x-4}{x-3}$

B) $\frac{x-4}{x-3}$

C) $\frac{3x-2}{x-4}$

D) $\frac{2x-3}{x-4}$

E) $\frac{3x-4}{x-2}$

33. $x = \frac{2(2-f(x))}{3f(x)+1}$

$\Rightarrow f^{-1}(1) = ?$

A) $\frac{1}{2}$

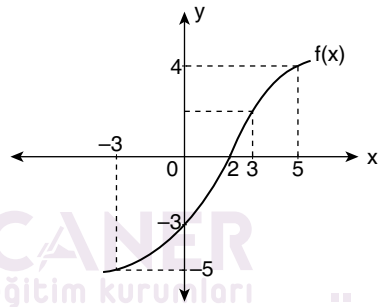
B) 1

C) $\frac{3}{2}$

D) 2

E) $\frac{5}{2}$

34.



$\Rightarrow \frac{f(5) + f(-3)}{f(0)} = ?$

A) $\frac{1}{2}$

B) $\frac{1}{3}$

C) $\frac{2}{3}$

D) 1

E) 2