ÇÖZÜMLER

1. $\left(\frac{5}{10}\right)^{-1}+\frac{2}{\frac{5}{10}+\frac{2}{\left(\frac{5}{10}\right)^{-1}}}$

$\frac{10}{5}+\frac{2}{\frac{1}{2}+\frac{2}{\frac{10}{5}}}=2+\frac{2}{\frac{1}{2}+\frac{2}{2}}$

$2+\frac{2}{\frac{1}{2}+1}=2+\frac{2}{\frac{3}{2}}=2+\frac{4}{3}$

$=\frac{10}{3}$

Cevap: C

2. $\frac{a^4.8a^3.-a^{10}}{4a^2.-a^3}=\frac{-8a^{17}}{-4a^5}$

$=2.a^{12}$

Cevap: D

3. $\frac{3^{3x}}{5}=4^{2x}$

$\frac{3^{3x}}{4^{2x}}=5$

$\left(\frac{3^{3x}}{4^{2x}}\right)^{\frac{1}{x}}=5^{\frac{1}{x}}$

$\frac{3^3}{4^2}=5^{\frac{1}{x}}$

$5^{\frac{1}{x}}=\frac{27}{16}$

Cevap: A

4. $\frac{\cancel{10^{40}}(5.10^2-3+7.10^1)}{\cancel{10^{40}}(3.10-3)}$

$\frac{567}{27}=21$

Cevap: B

5. $\sqrt{5-\sqrt{21}}-\sqrt{5+\sqrt{21}}$

$\sqrt{\frac{x2.(5-\sqrt{21})}{x2}}-\sqrt{\frac{2(5+\sqrt{21})}{2}}$

$\frac{\sqrt{10-2\sqrt{21}}}{\sqrt{2}}-\frac{\sqrt{10+2\sqrt{21}}}{\sqrt{2}}$

$\frac{\sqrt{7}-\sqrt{3}-(\sqrt{7}+\sqrt{3})}{\sqrt{2}}$

$\frac{-2\sqrt{3}}{\sqrt{2}}=\frac{-2\sqrt{6}}{2}=-\sqrt{6}$

Cevap: B

6. a = 3k

b = 7k

c = 6k

a + b + c = 6k

3k + 7k + 6k = 16k = 64

k = 4

$\Rightarrow$ Ç = 3k = 3.4 = 12

Cevap: C

7. $\sqrt{3.\sqrt[3]{24+3}}$

$\sqrt{3.\sqrt[3]{27}}$

$\sqrt{3.3}=\sqrt{9}=3$

Cevap: E

8. $A = 5x + 2 = 6y + 3 = 11z + 8$

$A + 3 = 5x + 5 = 6y + 6 = 11z + 11$

$A + 3 = okek(5, 6, 11)k$

$A + 3 = 330k$

$A + 3 = 330 \rightarrow A = 327$

$327 = 6y + 3 \Rightarrow 6y = 324$

$y = 54$

Cevap: E

9. $\dfrac{3^{\frac{1}{4}}}{3^{\frac{2}{3}}} = (3^x)^2$

$3^{\frac{1}{4}-\frac{2}{3}} = 3^{2x}$

$3^{\frac{3-8}{12}} = 3^{2x}$

$3^{\frac{-5}{12}} = 3^{2x}$

$2x = \dfrac{-5}{12}$

$x = \dfrac{-5}{24}$

Cevap: D

10. • $a.\underset{+}{\textcircled{b^2}}.\underset{+}{\textcircled{c^4}} < 0 \Rightarrow a < 0$

• $c - a < 0 \Rightarrow c < a \Rightarrow c < 0$

• $\underset{+}{\textcircled{b^2}}.b^3.\underset{-}{\textcircled{c^5}} < 0 \Rightarrow b > 0$

$\Rightarrow c < a < b$

Cevap: E

11. $\underset{\frac{13}{2}}{a} + \underset{\frac{13}{2}}{b} = 13$

$\Rightarrow a.b = \dfrac{13}{2} \cdot \dfrac{13}{2} = \dfrac{169}{4}$

Cevap: D

12. $3a + 2b + 5c = 78$

$\downarrow \quad \downarrow \quad \downarrow$

$1 \quad 0 \quad 15$

Cevap: B

13. • $2^a = 3^b \Rightarrow 2^{\frac{a}{b}} = 3^{\frac{b}{b}}$

$2^{\frac{a}{b}} = 3$

$\left(2^{\frac{a}{b}}\right)^2 = 3^2$

$4^{\frac{a}{b}} = 9$

• $3^b = 7^c \Rightarrow 3^{\frac{b}{b}} = 7^{\frac{c}{b}}$

$3^1 = 7^{\frac{c}{b}}$

$3^2 = \left(7^{\frac{c}{b}}\right)^2$

$9 = 49^{\frac{c}{b}}$

$\Rightarrow 4^{\frac{a}{b}} - 49^{\frac{c}{b}} = 9 - 9 = 0$

Cevap: A

14. $\begin{array}{rr} & a + b - c = 14 \\ & a - b + c = 16 \\ + & b + c - a = 12 \\ \hline & a + b + c = 42 \end{array}$ $(c = a + b - 14)$

$a + b + a + b - 14 = 42$

$2(a + b) = 56$

$a + b = 28$

Cevap: A

15. $\sqrt{4-n} \Rightarrow 4-n \geq 0$

$4 \geq n$

$(n-4)! \Rightarrow n-4 \geq 0$

$n \geq 4$

$\Rightarrow$ n = 4 olmalı

$$\frac{(4-4)!+2^4}{(4+1)^2-\sqrt{4-4}} = \frac{0!+16}{5^2-\sqrt{0}}$$

$$= \frac{17}{25}$$

Cevap: A

16. $\frac{\overset{x}{3x^2+7x-6}}{x-1} \cdot \frac{x^2-4x+3}{\underset{3}{x^2-9}}$

$$= \frac{(3x-2)\cancel{(x+3)}}{\cancel{x-1}} \cdot \frac{\cancel{(x-3)}\cancel{(x-1)}}{\cancel{(x-3)}\cancel{(x+3)}}$$

$= 3x - 2$

Cevap: C

17. $f(x) = 2^{x-3} - 5$

$f^{-1}(11) \Rightarrow 2^{x-3} - 5 = 11$

$2^{x-3} = 16$

$2^{x-3} = 2^4$

$x - 3 = 4$

$x = 7$

Cevap: C

18. $\frac{x}{5} + \frac{y}{3} = 1$

$3x + 5y = 15$

$5y = 15 - 3x$

$f(x) = y = \frac{15-3x}{5}$

$f(0) + f(5) = \frac{15-0}{5} + \frac{15-15}{5} = 3$

Cevap: E

19. $(fog^{-1})(2) = (gof^{-1})(2)$

- $\underset{2}{f^{-1}}(\underset{2}{3x-4}) = 2x-1$

  $f^{-1}(2) = 3$

- $\underbrace{(gof^{-1})(2)}_{3} = g(3) = -2$

- $\underset{-1}{g}(\underset{-1}{2x+5}) = x-1$

  $g(3) = -2$

Cevap: A

20. $\underset{5}{P}(\underset{5}{2x-3}) = (\underset{5}{x^2-2x-15}).\underset{5}{Q}(\underset{5}{x+4}) + 3x - 2$

$P(7) = 0.Q(x+4) + 15 - 2$

$P(7) = 13$

Cevap: B

21. $A \cap B = \{1, 2\}$

$\Rightarrow 2^{s(A\cap B)} = 2^2 = 4$

Cevap: B

22. $f(2^x - 2^{-x}) = (2^x - 2^{-x})^2 + 2 + 3$

$\underbrace{f(2^x - 2^{-x})}_{3} = \underbrace{(2^x - 2^{-x})^2}_{3} + 5$

$f(3) = 3^2 + 5 = 14$

Cevap: B

23. $2x - 3 \equiv x + 1 \pmod{11}$

$x \equiv 4 \pmod{11}$

$\downarrow$

4

Cevap: C

Diğer Sayfaya Geçiniz.

24. $x - 5 = 0 \Rightarrow x = 5$ için $A = 0 + 16 = 16$

$x + 11 = 0 \Rightarrow x = 11$ için $A = 16 + 0 = 16$

Cevap: E

25. $\frac{x+7}{x^2-x-2} = \frac{A}{x-2} + \frac{B}{x+1}$

$\frac{x+7}{x^2-x-2} = \frac{A(x+1)+B(x-2)}{x^2-x-2}$

$x + 7 = Ax + A + Bx - 2B$

$x + 7 = (A + B)x + A - 2B$

$-1/ \quad A + B = 1$

$A - 2B = 7$

$-3B = 6$

$B = -2 \Rightarrow A - 2 = 1$

$A = 3$

$A - B = 3 - (-2)$

$= 3 + 2$

$= 5$ bulunur.

Cevap: D

26. $\frac{9^x - 7.3^x + 6}{3^x - 6} = 8$

$3^x = a$ olsun

$\frac{a^2 - 7a + 6}{a - 6} = 8$

$\frac{(a-1)(\cancel{a-6})}{\cancel{a-6}} = 8$

$a - 1 = 8$

$a = 9$

$3^x = 9 = 3^2$

$x = 2$ bulunur.

Cevap: C

27. $a = 2,4\,5\,7\,\boxed{7}\,7\,7\ldots$

$b = 2,4\,5\,7\,\boxed{5}\,7\,5\,7\ldots$

$c = 2,4\,5\,7\,\boxed{4}\,5\,7\ldots$

$c < b < a$ bulunur.

Cevap: D

28. $1 + \frac{1 + \frac{\boxed{1+\frac{1}{3}}}{3}}{\frac{1}{3}} = 1 + \frac{1 + \frac{\boxed{\frac{4}{3}}}{3}}{\frac{1}{3}}$

$= 1 + \frac{1 + \frac{4}{9}}{\frac{1}{3}}$

$= 1 + \frac{13}{9} \cdot \frac{3}{1}$

$= 1 + \frac{13}{3} = \frac{16}{3}$

Cevap: B

29. $x^2 + 4x + 4a - 2 = 0$

$\frac{1}{x_1} + \frac{1}{x_2} = \boxed{\frac{x_2 + x_1}{x_1 . x_2}} = 4$

$\downarrow$

$\frac{-b}{c} = \frac{-4}{4a-2} = 4$

$16a - 8 = -4$

$16a = 4$

$a = \frac{4}{16} = \frac{1}{4}$ bulunur.

Cevap: A

30. $x_1 . x_2 = \frac{c}{a} = -2$

$\frac{3m + 2}{m - 1} = -2$

$3m + 2 = -2m + 2$

$5m = 0$

$m = 0$ bulunur.

Cevap: B

31. $(3f + 2g)(x) = 3f(x) + 2g(x)$

$\Rightarrow \quad 3(x^2 - 2) + 2g(x) = x^2 + 8x + 4$

$3x^2 - 6 + 2g(x) = x^2 + 8x + 4$

$2g(x) = -2x^2 + 8x + 10$

$g(x) = -x^2 + 4x + 5$

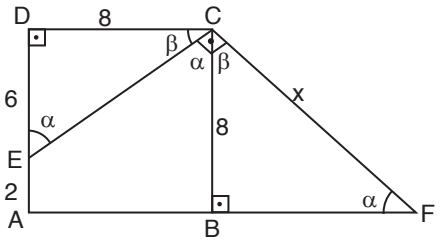
$g(2) = -2^2 + 4.2 + 5$

$= -4 + 8 + 5$

$= 9$ bulunur.

Cevap: D

32.



EDC ≅ FBC olduğundan $|BF| = 6$ br

$|CF|^2 = 6^2 + 8^2 = 36 + 64 = 100$

$|CF| = 10$ br bulunur.

Cevap: C

33. Düzgün bir beşgenin bir iç açısı;

$m(\widehat{C}) = \dfrac{(5-2).180°}{5} = 108°$ dir.

DCBF dörtgeninde

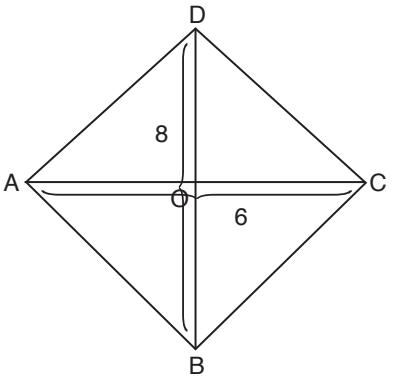
$m(\widehat{DCB}) = m(\widehat{FDC}) + m(\widehat{F}) + m(\widehat{CBF})$

$108° = 28° + 62° + x$

$18° = x$ bulunur.

Cevap: B

34.

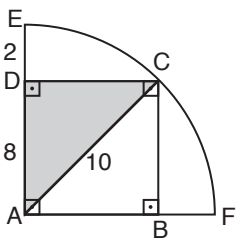


$A(ABCD) = \dfrac{|AC|.|BD|}{2}$

$= \dfrac{6.8}{2} = 24$ br^2

Cevap: B

35.



[AC] köşegeni çizilirse çemberin yarıçapı olur.

$|AE| = |AC| = 10$ cm olur.

ADC üçgeninde pisagordan

$|AD|^2 + |DC|^2 = |AC|^2$

$8^2 + |DC|^2 = 10^2$

$|DC|^2 = 100 - 64 = 36$

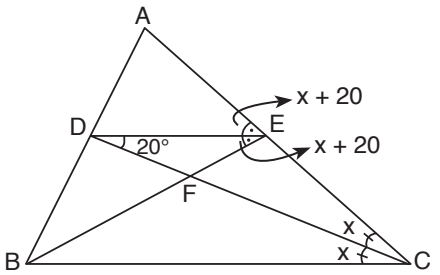
$|DC| = 6$ cm

$A(ABCD) = 6.8 = 48$ cm^2 bulunur.

Cevap: D

Diğer Sayfaya Geçiniz.

36.



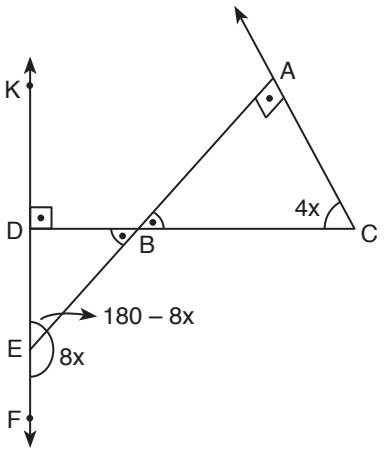
$m(\widehat{EBC}) + 2x = m(\widehat{BEA})$

$m(\widehat{EBC}) + 2x = 2x + 40$

$m(\widehat{EBC}) = 40°$

Cevap: C

37.



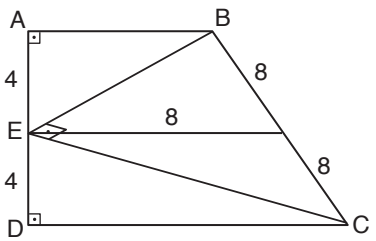
$\Rightarrow$ $180 - 8x + 90 = 90 + 4x$

$180 = 12x$

$x = 15$

Cevap: B

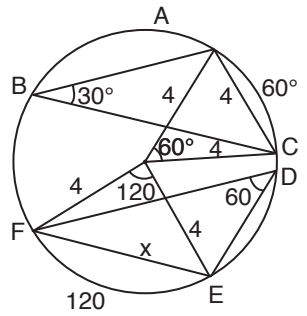
38.

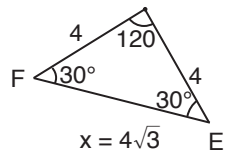


$A(EBC) = \frac{8.8}{2} = 32$

Cevap: D

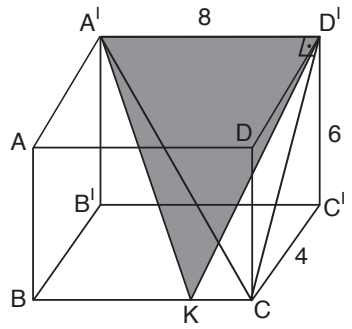
39.





Cevap: E

40.



- $A(A'D'K) = A(A'CD')$
- $4^2 + 6^2 = |D'C|^2 \Rightarrow |D'C| = 2\sqrt{13}$

$\Rightarrow$ $A(A'CD') = \frac{2\sqrt{13}.8}{2} = 8\sqrt{13}$

Cevap: A