

$$\begin{aligned}
 1. \quad \sqrt{61 + \sqrt{7 + \sqrt{4}}} &= \sqrt{61 + \sqrt{7 + 2}} \\
 &= \sqrt{61 + \sqrt{9}} \\
 &= \sqrt{61 + 3} \\
 &= \sqrt{64} = 8
 \end{aligned}$$

Cevap: E

$$\begin{aligned}
 2. \quad \frac{\sqrt{19 + \sqrt{31 + \sqrt{25}}}}{10} &= \frac{\sqrt{19 + \sqrt{31 + 5}}}{10} = \frac{\sqrt{19 + \sqrt{36}}}{10} \\
 &= \frac{\sqrt{19 + 6}}{10} \\
 &= \frac{\sqrt{25}}{10} = \frac{5}{10} = \frac{1}{2}
 \end{aligned}$$

Cevap: B

$$\begin{aligned}
 3. \quad 5(\sqrt{3} + 2) - \sqrt{75} \\
 5\sqrt{3} + 10 - 5\sqrt{3} = 10
 \end{aligned}$$

Cevap: D

$$4. \quad ({}^3\sqrt{2})^5 = \left(2^{\frac{1}{3}}\right)^5 = 2^{\frac{5}{3}} \text{ olmalıydı.}$$

Cevap: B

$$\begin{aligned}
 5. \quad \frac{\sqrt{75} + \sqrt{108} - \sqrt{27}}{\sqrt{3}} &= \frac{5\sqrt{3} + 6\sqrt{3} - 3\sqrt{3}}{\sqrt{3}} \\
 &= \frac{8\sqrt{3}}{\sqrt{3}} = 8
 \end{aligned}$$

Cevap: D

$$\begin{aligned}
 6. \quad (\sqrt{6,4} - \sqrt{2,5}) \cdot 10 \\
 \left(\frac{\sqrt{64}}{\sqrt{10}} - \frac{\sqrt{25}}{\sqrt{10}}\right) \cdot 10 \\
 \left(\frac{8}{\sqrt{10}} - \frac{5}{\sqrt{10}}\right) \cdot 10 = \frac{3}{\sqrt{10}} \cdot 10 = \frac{3\sqrt{10}}{10} \cdot 10 \\
 = 3\sqrt{10}
 \end{aligned}$$

Cevap: B

$$\begin{aligned}
 7. \quad D) \quad {}^6\sqrt{47 + {}^3\sqrt{10 - \sqrt{4}}} &= {}^6\sqrt{47 + {}^3\sqrt{10 - 2}} = {}^6\sqrt{47 + {}^3\sqrt{8}} \\
 &= {}^6\sqrt{47 + 2} = {}^6\sqrt{49} = {}^6\sqrt{7^2} = {}^3\sqrt{7} \text{ tam sayı değil}
 \end{aligned}$$

Cevap: D

$$8. \quad \frac{\sqrt{5} \cdot \sqrt{20}}{{}^3\sqrt{5} \cdot {}^3\sqrt{25} - 3} = \frac{\sqrt{100}}{{}^3\sqrt{125} - 3} = \frac{10}{5 - 3} = \frac{10}{2} = 5$$

Cevap: E

$$\begin{aligned}
 9. \quad x &= \sqrt{50} - \sqrt{18} + \sqrt{8} = 5\sqrt{2} - 3\sqrt{2} + 2\sqrt{2} = 4\sqrt{2} \\
 y &= \frac{16}{\sqrt{2}} - \sqrt{72} - \sqrt{18} = \frac{16\sqrt{2}}{2} - 6\sqrt{2} - 3\sqrt{2} \\
 &= 8\sqrt{2} - 9\sqrt{2} = -\sqrt{2} \\
 \Rightarrow x \cdot y &= 4\sqrt{2} \cdot -\sqrt{2} = -4 \cdot 2 = -8
 \end{aligned}$$

Cevap: A

$$\begin{aligned}
 10. \quad \frac{\sqrt{48} + \sqrt{12}}{\sqrt{45} - \sqrt{5}} \cdot \frac{\sqrt{5}}{\sqrt{3}} &= \frac{4\sqrt{3} + 2\sqrt{3}}{3\sqrt{5} - \sqrt{5}} \cdot \frac{\sqrt{5}}{\sqrt{3}} \\
 &= \frac{6\sqrt{3}}{2\sqrt{5}} \cdot \frac{\sqrt{5}}{\sqrt{3}} = 3
 \end{aligned}$$

Cevap: D

$$11. \frac{\sqrt[4]{4^3 + 4^3 + 4^3 + 4^3}}{\sqrt[5]{2^3 + 2^3 + 2^3 + 2^3}} = \frac{\sqrt[4]{4 \cdot 4^3}}{\sqrt[5]{4 \cdot 2^3}} = \frac{\sqrt[4]{4^4}}{\sqrt[5]{2^5}} = \frac{4}{2} = 2$$

Cevap: B

$$12. \frac{\sqrt{(-5)^2} - \sqrt[3]{-3^3} + \sqrt[6]{(-6)^6}}{\sqrt{81} + \sqrt[5]{(-2)^5}} = \frac{5 + 3 + 6}{9 + (-2)}$$

$$= \frac{14}{7} = 2$$

Cevap: D

$$13. \sqrt{\frac{1}{9} - \frac{1}{25}} \cdot \frac{2}{15}$$

(25) (9)

$$\sqrt{\frac{25-9}{9 \cdot 25}} \cdot \frac{15}{2} = \sqrt{\frac{16}{9 \cdot 25}} \cdot \frac{15}{2} = \frac{4}{3 \cdot 5} \cdot \frac{15}{2}$$

$$= 2$$

Cevap: D

$$14. \sqrt{\frac{1}{25}} \cdot \sqrt{0,25} = \frac{1}{5} \cdot \sqrt{\frac{25}{100}}$$

$$= \frac{1}{5} \cdot \frac{5}{10} = \frac{1}{10} = 0,1$$

Cevap: A

$$1. \frac{2.3\sqrt{2^2} \cdot 2.3\sqrt{3^3}}{6\sqrt{54}} = \frac{6\sqrt{2^2 \cdot 3^3}}{6\sqrt{54}} = \sqrt[6]{\frac{4 \cdot 27}{54}} = \sqrt[6]{2}$$

Cevap: A

$$2. \begin{array}{l} \sqrt{5} \cdot \sqrt{5} \\ \swarrow \quad \searrow \\ 15\sqrt{15} = 5 \cdot 3 \cdot \sqrt{5} \cdot \sqrt{3} = \sqrt{5} \cdot \sqrt{5} \cdot \sqrt{3} \cdot \sqrt{3} \cdot \sqrt{5} \cdot \sqrt{3} \\ \quad \quad \quad \swarrow \quad \searrow \\ \quad \quad \quad \sqrt{3} \cdot \sqrt{3} = (\sqrt{5})^3 \cdot (\sqrt{3})^3 \\ \quad \quad \quad = x^3 \cdot y^3 \end{array}$$

Cevap: A

$$3. \bullet \sqrt{10} \times \sqrt{5} \times \sqrt{2} = A = \sqrt{100} = 10$$

$$\sqrt{8} \times \sqrt{6} \times \sqrt{3} = B = \sqrt{144} = 12$$

$$\Rightarrow A + B = 10 + 12 = 22$$

$$\bullet \sqrt{10} \times \sqrt{8} \times \sqrt{5} = A = \sqrt{400} = 20$$

$$\sqrt{6} \times \sqrt{3} \times \sqrt{2} = B = \sqrt{36} = 6$$

$$\Rightarrow A + B = 20 + 6 = 26$$

O halde A + B'nin farklı değerleri toplamı 22 + 26 = 48 olur.

Cevap: B

$$4. \bullet \sqrt{21} = \sqrt{5} = 3$$

$$\bullet \sqrt{7} = \sqrt{2} = 1$$

$$\Rightarrow \sqrt{21} + \sqrt{7} = 3 + 1 = 4 \text{ olur.}$$

Cevap: D

$$5. \sqrt{432} = 12\sqrt{3}$$

$$\sqrt{500} = 10\sqrt{5}$$

$$\sqrt{550} = 5\sqrt{22}$$

$$\sqrt{800} = 20\sqrt{2}$$

O halde  $\sqrt{2}$ ,  $\sqrt{3}$ ,  $\sqrt{5}$ ,  $\sqrt{22}$ 'yi bilmelidir.

Cevap: E

$$6. \frac{\sqrt{0,0009} \cdot \sqrt[3]{0,000064}}{\sqrt{0,0001}} = \frac{\sqrt{9 \cdot 10^{-4}} \cdot \sqrt[3]{64 \cdot 10^{-6}}}{\sqrt{1 \cdot 10^{-4}}}$$

$$= \frac{3 \cdot 10^{-2} \cdot 4 \cdot 10^{-2}}{10^{-2}} = \frac{12}{10^2} = \frac{12}{100} = 0,12$$

Cevap: B

$$7. \text{I. } \sqrt{75} \cdot \sqrt{12} = 5\sqrt{3} \cdot 2\sqrt{3} = 10 \cdot 3 = 30$$

$$\text{II. } \sqrt{75} \cdot \sqrt{108} = 5\sqrt{3} \cdot 6\sqrt{3} = 30 \cdot 3 = 90$$

$$\text{III. } \sqrt{75} \cdot \sqrt{216} = 5\sqrt{3} \cdot 6\sqrt{6} = 90\sqrt{2}$$

I ve II rasyonel sayıdır.

Cevap: D

$$8. a < 0 < b$$

$$\sqrt{a^2} - \sqrt[4]{b^4} + \sqrt{(b-a)^2}$$

$$\begin{array}{ccc} |a| & - & |b| + |b-a| \\ - & + & + \end{array}$$

$$-a - b + b - a = -2a$$

Cevap: A

9.  $\sqrt{|x-4|-12}$  ifadesini en küçük yapan x değerleri  $\sqrt{0}$  için bulunur.

$$|x-4|-12=0 \Rightarrow |x-4|=12$$

$$\begin{array}{l} / \quad \backslash \\ x-4=12 \quad x-4=-12 \\ x=16 \quad \boxed{x=-8} \end{array}$$

$$\Rightarrow x=-8 \text{ için } \sqrt[3]{x}+2=\sqrt[3]{-8}+2=-2+2=0 \text{ olur.}$$

Cevap: C

10.  $m < 0 < n$

I.  $\sqrt[3]{n^3} = n$  olmalıydı.

II.  $\sqrt[4]{m^4} = |m| = -m$  Doğru

III.  $\sqrt[6]{(m-n)^6} = \underbrace{|m-n|}_{-} = n-m$  Doğru

Cevap: C

11.  $K = \frac{\sqrt{10-x} + \sqrt[3]{x-9} + \sqrt[4]{x-10}}{\sqrt[3]{x+5}}$

•  $\sqrt{10-x} \Rightarrow 10-x \geq 0$  ve  $10 \geq x$  olmalı

$\sqrt[4]{x-10} \Rightarrow x-10 \geq 0$  ve  $x \geq 10$  olmalı

O halde  $x = 10$  olmalıdır.

•  $x = 10$  için  $K = \frac{\sqrt{0} + \sqrt[3]{1} + \sqrt[4]{0}}{\sqrt[3]{64}} = \frac{1}{4}$  olur.

Cevap: D

12.  $\sqrt{a^2+b^2+2ab} - \sqrt{4b^2} - \sqrt{a^2}$

$$\sqrt{(a+b)^2} - |2b| - |a|$$

$$\underbrace{|a+b|}_{-} - \underbrace{|2b|}_{-} - \underbrace{|a|}_{-}$$

$$-a - b + 2b + a = b$$

Cevap: D

13.  $\frac{9}{\sqrt{10-1}} - \frac{6}{\sqrt{10+2}}$

$$\frac{9(\sqrt{10}+1)}{9} - \frac{6(\sqrt{10}-2)}{6} = \sqrt{10} + 1 - \sqrt{10} + 2 = 3$$

Cevap: C

14.  $\frac{3}{\sqrt{5}-\sqrt{2}} - \frac{10}{\sqrt{5}} - \frac{1}{\sqrt{3-2\sqrt{2}}}$

$$= \frac{3(\sqrt{5}+\sqrt{2})}{3} - \frac{10\sqrt{5}}{5} - \frac{1}{\sqrt{2+1}}$$

$$= \sqrt{5} + \sqrt{2} - 2\sqrt{5} - \frac{\sqrt{2}+1}{1}$$

$$= \sqrt{2} - \sqrt{5} - \sqrt{2} - 1$$

$$= -\sqrt{5} - 1$$

Cevap: C

$$1. \sqrt[5]{(3+\sqrt{11})^5} - 4\sqrt{(3-\sqrt{11})^4}$$

$$3 + \sqrt{11} - \underbrace{|3 - \sqrt{11}|}_{-}$$

$$3 + \sqrt{11} + 3 - \sqrt{11} = 6$$

Cevap: C

$$2. \text{ I. } \frac{1}{\sqrt{3}-\sqrt{2}} = \frac{\sqrt{3}+\sqrt{2}}{1} = \sqrt{3} + \sqrt{2} \quad \checkmark$$

$$\text{ II. } \frac{1}{\sqrt{3}} = \frac{\sqrt{3}}{3}$$

$$\text{ III. } \frac{1}{\sqrt{5}-\sqrt{3}} = \frac{\sqrt{5}+\sqrt{3}}{2}$$

Yalnız I kendi eşleniğidir.

Cevap: A

$$3. (\sqrt{5}-2)^{2024} \cdot (\sqrt{5}+2)^{2025} - \sqrt{5}$$

$$(\sqrt{5}-2)^{2024} \cdot (\sqrt{5}+2)^{2024} \cdot (\sqrt{5}+2) - \sqrt{5}$$

$$((\sqrt{5}-2)(\sqrt{5}+2))^{2024} \cdot (\sqrt{5}+2) - \sqrt{5}$$

$$(5-4)^{2024} \cdot (\sqrt{5}+2) - \sqrt{5}$$

$$\sqrt{5}+2 - \sqrt{5} = 2$$

Cevap: C

$$4. \sqrt{n+4} + \sqrt{n} = m$$

$$\times \frac{\sqrt{n+4} - \sqrt{n}}{\sqrt{n+4} - \sqrt{n}} = ?$$

$$n+4 - n = m \cdot ?$$

$$4 = m \cdot ?$$

$$? = \frac{4}{m} \text{ olur.}$$

Cevap: A

$$5. a = \sqrt[4]{3} \Rightarrow a^2 = \sqrt{3}$$

$$\Rightarrow (2 - a^2)^{-1} = (2 - \sqrt{3})^{-1} = \frac{1}{2 - \sqrt{3}}$$

$$= \frac{2 + \sqrt{3}}{4 - 3} = 2 + \sqrt{3}$$

Cevap: E

$$6. (\sqrt{7} - \sqrt{5})^x = 16$$

$$\times \frac{(\sqrt{7} + \sqrt{5})^x}{(\sqrt{7} + \sqrt{5})^x} = ?$$

$$((\sqrt{7} - \sqrt{5})(\sqrt{7} + \sqrt{5}))^x = 16 \cdot ?$$

$$(7 - 5)^x = 16 \cdot ?$$

$$2^x = 2^4 \cdot ?$$

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

Cevap: A

$$7. \frac{\sqrt{7}+1}{\sqrt{5}-2} = x$$

$$+ \frac{\sqrt{7}-1}{\sqrt{5}+2} = ?$$

$$\frac{\sqrt{7}+1}{\sqrt{5}-2} \cdot \frac{\sqrt{7}-1}{\sqrt{5}+2} = x \cdot ?$$

$$\frac{7-1}{5-4} = x \cdot ?$$

$$6 = x \cdot ?$$

$$? = \frac{6}{x}$$

Cevap: A

$$8. \frac{1}{\sqrt{3-2\sqrt{2}}} + \frac{5}{\sqrt{5}} - \frac{3}{\sqrt{5-\sqrt{2}}}$$

2.1

$$= \frac{1}{\frac{\sqrt{2}-1}{\sqrt{2+1}}} + \frac{5\sqrt{5}}{5} - \frac{3(\sqrt{5}+\sqrt{2})}{5-2}$$

$$= \frac{\sqrt{2}+1}{2-1} + \sqrt{5} - \frac{3(\sqrt{5}+\sqrt{2})}{3}$$

$$= \sqrt{2}+1 + \sqrt{5} - \sqrt{5} - \sqrt{2}$$

$$= 1$$

Cevap: A

$$9. \frac{1}{2+\sqrt{n}} + \frac{1}{2-\sqrt{n}} = 2$$

$$\frac{2-\sqrt{n}+2+\sqrt{n}}{4-n} = 2$$

$$4 = 8 - 2n$$

$$2n = 4 \Rightarrow n = 2$$

Cevap: B

$$10. \frac{\sqrt{x}-\sqrt{y}}{\sqrt{x}+\sqrt{y}} = 4-\sqrt{15} \Rightarrow \frac{\sqrt{x}+\sqrt{y}}{\sqrt{x}-\sqrt{y}} = \frac{1}{4-\sqrt{15}}$$

$$= \frac{4+\sqrt{15}}{16-15} = 4+\sqrt{15}$$

Cevap: A

$$11. \bullet \frac{\sqrt{a}}{\sqrt{b}} = 2 \Rightarrow \sqrt{a} = 2\sqrt{b}$$

$$\bullet \sqrt{a} \cdot \sqrt{b} = \frac{4}{5} \Rightarrow 2\sqrt{b} \cdot \sqrt{b} = \frac{4}{5}$$

$$2b = \frac{4}{5} \Rightarrow b = \frac{2}{5}$$

$$\bullet \sqrt{a} = 2\sqrt{b} \Rightarrow a = 4b = 4 \cdot \frac{2}{5} = \frac{8}{5}$$

O halde  $a + b = \frac{8}{5} + \frac{2}{5} = \frac{10}{5} = 2$  olur.

Cevap: C

$$12. x + y = 6$$

$$\begin{array}{l} 2 \quad 4 \\ 3 \quad 3 \\ 4 \quad 2 \end{array}$$

$$\Rightarrow 2\sqrt{4} = \sqrt{z} \Rightarrow z = 16$$

$$3\sqrt{3} = \sqrt{z} \Rightarrow z = 27$$

$$4\sqrt{2} = \sqrt{z} \Rightarrow z = 32$$

$$75 \text{ olur.}$$

Cevap: B

$$13. \sqrt[4]{2^3 \sqrt{2} \sqrt{2}} = 2^{\frac{x}{96}}$$

$$24\sqrt{2^1 \cdot 2^2 \cdot 2^6} = 2^{\frac{x}{96}}$$

$$24\sqrt{2^9} = 2^{\frac{x}{96}}$$

$$2^{\frac{9}{24}} = 2^{\frac{x}{96}} \Rightarrow \frac{9}{24} = \frac{x}{96}$$

$$x = 36$$

Cevap: E

$$14. \frac{x}{\sqrt{5}+1} = \frac{\sqrt{(1-\sqrt{5})^2}}{2}$$

$$\frac{x}{\sqrt{5}+1} = \frac{|1-\sqrt{5}|}{2} \Rightarrow \frac{x}{\sqrt{5}+1} = \frac{\sqrt{5}-1}{2}$$

$$x = \frac{(\sqrt{5}-1)(\sqrt{5}+1)}{2} = \frac{4}{2} = 2$$

Cevap: E

$$1. \frac{1}{\sqrt{11-2\sqrt{30}}} + \frac{1}{\sqrt{11+2\sqrt{30}}}$$

$$\frac{1}{\sqrt{6.5}} + \frac{1}{\sqrt{6.5}}$$

$$\frac{1}{\sqrt{6-\sqrt{5}}} + \frac{1}{\sqrt{6+\sqrt{5}}} = \frac{\sqrt{6+\sqrt{5}} + \sqrt{6-\sqrt{5}}}{1}$$

$$= 2\sqrt{6}$$

Cevap: E

$$2. \frac{1}{\sqrt{m}} - \frac{4}{\sqrt{25m}} = 1$$

$$\frac{1}{\sqrt{m}} - \frac{4}{5\sqrt{m}} = 1$$

$$\frac{5-4}{5\sqrt{m}} = 1 \Rightarrow 5\sqrt{m} = 1 \Rightarrow \sqrt{m} = \frac{1}{5}$$

Cevap: C

$$3. \frac{1}{\sqrt{3x}} + \frac{1}{3\sqrt{x}} = 2\sqrt{3} + 2$$

$$\frac{\sqrt{3}}{3\sqrt{x}} + \frac{1}{3\sqrt{x}} = 2(\sqrt{3} + 1)$$

$$\frac{\sqrt{3}+1}{3\sqrt{x}} = 2(\sqrt{3}+1)$$

$$6\sqrt{x} = 1$$

$$\sqrt{x} = \frac{1}{6}$$

$$\sqrt{x} = \frac{1}{36}$$

Cevap: E

$$4. \frac{\sqrt{m-1}}{\sqrt{m+1}} + \frac{2}{\sqrt{m+1}} = \frac{3}{2}$$

$$\frac{(\sqrt{m-1})^2 + 2(\sqrt{m+1})}{m-1} = \frac{3}{2}$$

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

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

$$2m+6 = 3m-3$$

$$m = 9$$

Cevap: E

$$5. \sqrt{m-n} = \sqrt{\frac{\sqrt{m-n}}{\sqrt{m+n}}}$$

$$\frac{\sqrt{\sqrt{m-n}}}{\sqrt{\sqrt{m-n}}} = \frac{\sqrt{\sqrt{m-n}}}{\sqrt{\sqrt{m+n}}}$$

$$\sqrt{\sqrt{m-n}} \cdot \sqrt{\sqrt{m+n}} = 1$$

$$\sqrt{(\sqrt{m-n})(\sqrt{m+n})} = 1$$

$$\sqrt{m-n^2} = 1$$

$$m-n^2 = 1$$

$$m = 1 + n^2$$

Cevap: E

$$6. x \cdot \left( \sqrt{\frac{1}{x} + \frac{2}{x^2}} \right) = \frac{3}{\sqrt{2}}$$

$$x \cdot \sqrt{\frac{x+2}{x^2}} = \frac{3}{\sqrt{2}}$$

$$x \cdot \frac{\sqrt{x+2}}{x} = \frac{3}{\sqrt{2}}$$

$$\sqrt{x+2} = \frac{3}{\sqrt{2}}$$

$$x+2 = \frac{9}{2} \Rightarrow x = \frac{9}{2} - 2 = \frac{5}{2}$$

Cevap: E

$$7. (\sqrt{a+2})^2 = \left(\sqrt{\frac{\sqrt{a+2}}{\sqrt{a-2}}}\right)^2$$

$$\frac{\sqrt{a+2}}{(\sqrt{a+2})^2} = \frac{\sqrt{a+2}}{\sqrt{a-2}}$$

$$\sqrt{a+2} = \frac{1}{\sqrt{a-2}}$$

$$a-4=1$$

$$a=5$$

Cevap: E

$$8. a = \sqrt{3} \times \sqrt{3} = 3$$

$$b = \sqrt{3} + \sqrt{3} = 2\sqrt{3}$$

$$c = \sqrt{3} - \sqrt{3} = 0$$

$\Rightarrow c < a < b$  olur.

Sırasıyla x, + ve - yazılmalı.

Cevap: C

$$9. a = 4\sqrt{7} = \sqrt{16 \cdot 7} = \sqrt{112}$$

$$b = 3\sqrt{11} = \sqrt{9 \cdot 11} = \sqrt{99}$$

$$c = 6\sqrt{3} = \sqrt{36 \cdot 3} = \sqrt{108}$$

$\Rightarrow a > c > b$

Cevap: C

$$10. a = 3\sqrt[3]{5} = \sqrt[3]{3^3 \cdot 5} = \sqrt[3]{135}$$

$$b = 4\sqrt[3]{2} = \sqrt[3]{4^3 \cdot 2} = \sqrt[3]{128}$$

$$c = 5\sqrt[3]{3} = \sqrt[3]{5^3 \cdot 3} = \sqrt[3]{375}$$

$\Rightarrow c > a > b$

Cevap: D

$$11. a = \sqrt{3} + \sqrt{20} \Rightarrow a^2 = 3 + 20 + 2\sqrt{60} = 23 + 2\sqrt{60}$$

$$b = \sqrt{2} + \sqrt{30} \Rightarrow b^2 = 2 + 30 + 2\sqrt{60} = 32 + 2\sqrt{60}$$

$$c = \sqrt{6} + \sqrt{10} \Rightarrow c^2 = 6 + 10 + 2\sqrt{60} = 16 + 2\sqrt{60}$$

$\Rightarrow c < a < b$  olur.

Cevap: D

$$12. I. a = \sqrt{18} \cdot \sqrt{54} = 3\sqrt{2} \cdot 3\sqrt{6} = 18\sqrt{3} \Rightarrow \text{irrasyonel}$$

$$II. b = \sqrt{54} \cdot \sqrt{27} = 27\sqrt{2}$$

$$c = \sqrt{18} \cdot \sqrt{27} = 3\sqrt{2} \cdot 3\sqrt{3} = 9\sqrt{6}$$

$$\Rightarrow a \cdot b \cdot c = 18\sqrt{3} \cdot 27\sqrt{2} \cdot 9\sqrt{6} = 18 \cdot 27 \cdot 9 \cdot 6 \text{ irrasyoneldir.}$$

III.  $b > a$  olduğundan sıralama

$$27\sqrt{2} > 18\sqrt{3} \text{ yanlış}$$

Cevap: C

$$13. 8\text{'den küçük en büyük tam kare } a = 4$$

$$8\text{'den büyük en küçük tam kare } b = 9$$

$$\sqrt{8} \cong \frac{8-4}{9-4} + \sqrt{4} = \frac{4}{5} + 2 = \frac{14}{5} = 2,8$$

Cevap: D

$$14. \sqrt[3]{\sqrt[3]{3^3+5^3} + \sqrt[3]{1^3+7^3}} = \sqrt[3]{(3+5)+(1+7)}$$

$$= \sqrt[3]{8+8}$$

$$= \sqrt[3]{2^3+2^3}$$

$$= 2+2=4$$

Cevap: C