1. $\sqrt[3]{\frac{18}{\sqrt{27}-\sqrt{3}}} = \sqrt[3]{\frac{18}{3\sqrt{3}-\sqrt{3}}}$

$= \sqrt[3]{\frac{18}{2\sqrt{3}}}$

$= \sqrt[3]{\frac{9}{\sqrt{3}}}$ $\quad(\sqrt{3})$

$= \sqrt[3]{\frac{9\sqrt{3}}{3}}$

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

$= \sqrt[6]{3.3^2}$

$= \sqrt[\cancel{6}^{2}]{3^{\cancel{3}}}$

$= \sqrt{3}$

Cevap: E

2. $\sqrt{\frac{\sqrt{252}-6}{\sqrt{7}+1}} - \sqrt{7} = \sqrt{\frac{\sqrt{36.7}-6}{\sqrt{7}+1}} - \sqrt{7}$

$= \sqrt{\frac{6\sqrt{7}-6}{\sqrt{7}+1}} - \sqrt{7}$

$= \sqrt{\frac{6(\sqrt{7}-1)}{\sqrt{7}+1}} - \sqrt{7}$ $\quad(\sqrt{7}-1)$

$= \sqrt{\frac{6.(\sqrt{7}-1)^2}{7-1}} - \sqrt{7}$

$= \sqrt{\frac{\cancel{6}.(\sqrt{7}-1)^2}{\cancel{6}}} - \sqrt{7}$

$= \sqrt{(\sqrt{7}-1)^2} - \sqrt{7}$

$= |\sqrt{7}-1| - \sqrt{7}$

$= \sqrt{7}-1-\sqrt{7}$

$= -1$

Cevap: C

3. $\frac{\sqrt{5+\sqrt{21}}}{\sqrt{2}.(\sqrt{7}+\sqrt{3})} = \frac{\sqrt{2}.\sqrt{5+\sqrt{21}}}{\sqrt{2}.\sqrt{2}(\sqrt{7}+\sqrt{3})}$

$= \frac{\sqrt{10+2\sqrt{21}}}{2.(\sqrt{7}+\sqrt{3})}$

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

$= \frac{1}{2}$

Cevap: A

4. $\frac{1}{3\sqrt{3}-5}_{(3\sqrt{3}+5)} - \frac{1}{3\sqrt{3}+5}_{(3\sqrt{3}-5)}$

$= \frac{3\sqrt{3}+5-(3\sqrt{3}-5)}{27-25}$

$= \frac{10}{2}$

$= 5$

Cevap: C

5. $\frac{\frac{\sqrt{2}}{\frac{\sqrt{3}}{\sqrt{5}}} - \frac{\sqrt{5}}{\frac{\sqrt{3}}{\sqrt{2}}}}{}$

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

$\frac{\sqrt{10}}{\frac{\sqrt{3}}{\sqrt{2}}} - \frac{\sqrt{5}}{\sqrt{6}} = \frac{\sqrt{20}-\sqrt{5}}{\sqrt{6}} = \frac{2\sqrt{5}-\sqrt{5}}{\sqrt{6}} = \frac{\sqrt{5}}{\sqrt{6}}_{(\sqrt{6})}$

$= \frac{\sqrt{30}}{6}$

Cevap: B

6. $\left(\sqrt{3}-\frac{1}{\sqrt{3}}\right)(\sqrt{3}+3)$

$= \frac{3-1}{\cancel{\sqrt{3}}}.\cancel{\sqrt{3}}(1+\sqrt{3})$

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

$= 2+2\sqrt{3}$

Cevap: A

7. $2 = a.(\sqrt{3}+1)$

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

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

$a = \sqrt{3}-1$

Cevap: E

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

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

$$= \left(\frac{(6+6)}{\sqrt{2}}\right)^{-1}$$

$$= \frac{\sqrt{2}}{12}$$

Cevap: D

9. • $\frac{x}{y} = \frac{\sqrt{6}-\sqrt{5}}{\sqrt{6}+\sqrt{5}}\cdot\frac{\sqrt{6}-\sqrt{5}}{\sqrt{6}-\sqrt{5}} = \frac{(\sqrt{6}-\sqrt{5})^2}{6-5} = \frac{6-2\sqrt{30}+5}{1}$

$= 11-2\sqrt{30}$

• $\frac{y}{x} = \frac{\sqrt{6}+\sqrt{5}}{\sqrt{6}-\sqrt{5}}\cdot\frac{(\sqrt{6}+\sqrt{5})}{(\sqrt{6}+\sqrt{5})} = \frac{(\sqrt{6}+\sqrt{5})^2}{6-5} = \frac{6+2\sqrt{30}+5}{1}$

$= 11+2\sqrt{30}$

$\Rightarrow 11-2\sqrt{30}-(11+2\sqrt{30}) = -4\sqrt{30}$ fazladır.

Cevap: C

10. $\sqrt[4]{\frac{4^8 4^{10}}{4^2}+4^8}$

$$= \sqrt[4]{\frac{4^8-4^{10}+4^{10}}{4^2}}$$

$$= \sqrt[4]{\frac{4^8}{4^2}}$$

$= \sqrt[4]{4^6} = \sqrt[4]{2^{12}} = 2^3 = 8$

Cevap: D

11. $\left(\frac{5^{1+\sqrt{5}}}{5^{1-\sqrt{5}}}\right)^{\sqrt{5}} = (5^{1+\sqrt{5}-1+\sqrt{5}})^{\sqrt{5}}$

$= (5^{2\sqrt{5}})^{\sqrt{5}}$

$= 5^{2.5}$

$= 5^{10}$

Cevap: B

12. $\frac{3-\sqrt{3}}{\sqrt{3}-1}+\frac{1}{\sqrt{3}}$

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

$$= \sqrt{3}+\frac{1}{\sqrt{3}}$$

$$= \frac{4}{\sqrt{3}}\cdot\frac{(\sqrt{3})}{} = \frac{4\sqrt{3}}{3}$$

Cevap: E

13. Berk'in Uras'a verdiği sayı = 6

● $\rightarrow \overset{2}{\cancel{6}}\cdot\frac{2}{\cancel{3}} = 4$

▲ $\rightarrow 4^3 = 64$

■ $\rightarrow 2.\sqrt{64} = 2.8 = 16$

Cevap: C

14. $3 < \sqrt{x} < 4$

$\downarrow$

$9 < x < 16$

8 bu aralıkta olmadığından

$x = 8$ olamaz.

Cevap: A