

$$\sqrt{192} - \frac{1}{2}\sqrt{48} - \sqrt{75}$$

(A) $\sqrt{3}$

(B) $2\sqrt{3}$

(C) $3\sqrt{3}$

(D) 3

$$8\sqrt{3} - \frac{1}{2} \times 4\sqrt{3} - 5\sqrt{3}$$

$$8\sqrt{3} - 7\sqrt{3}$$

..

If $3^{33} + 3^{34} + 2(2^{32} + 3^{33}) = 6^x$,

find x

(A) 34

(B) 33

(C) 35

(D) 36

$$\underline{3}^{33} + 3 \cdot \underline{3}^{33} + 2^{33} + \underline{2 \times 3}^{33}$$

$$\underline{3^{33} (1 + 3 + 2)} + 2^{33}$$

$$6 \times 3^{33} + 2^{33}$$

+

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

(A) 7

(B) 8

(C) 9

(D) 10

Handwritten work:

$$5 - 4 = \frac{5}{\sqrt{9+16}}$$
$$1 = \frac{5}{5}$$

(1 = 5/5) is circled in blue.

$$2\sqrt{x} - \sqrt{4x-11} = 1$$

~~(A) 6~~

~~(B) 7~~

~~(C) 8~~

(D) 9

$$6 - 5 = 1$$

$\sqrt[2]{8}$, $\sqrt[3]{7}$, $\sqrt[4]{6}$ are three numbers.

Find their correct increasing order?

(A) $\sqrt[2]{8} > \sqrt[4]{6} > \sqrt[3]{7}$

~~(B) $\sqrt[2]{8} > \sqrt[3]{7} > \sqrt[4]{6}$~~

(C) $\sqrt[3]{7} > \sqrt[4]{6} > \sqrt[2]{8}$

(D) $\sqrt[4]{6} > \sqrt[2]{8} > \sqrt[3]{7}$

Handwritten work for option B:

$$\sqrt[2]{8} = \frac{1 \times 6}{2 \times 6} \quad \sqrt[3]{7} = \frac{1 \times 4}{3 \times 4} \quad \sqrt[4]{6} = \frac{1 \times 3}{4 \times 3}$$

8 7 6

Handwritten work for option C:

$$\sqrt[3]{7} > \sqrt[4]{6} > \sqrt[2]{8}$$

7 6 8

✓

Find correct order of $\frac{1}{\sqrt[3]{23}} < \frac{1}{\sqrt{8}} < \frac{1}{\sqrt[4]{61}}$?

(A) $\frac{1}{\sqrt[4]{61}} > \frac{1}{\sqrt{8}} > \frac{1}{\sqrt[3]{23}}$

(B) $\frac{1}{\sqrt[4]{61}} > \frac{1}{\sqrt[3]{23}} > \frac{1}{\sqrt{8}}$

(C) $\frac{1}{\sqrt{8}} > \frac{1}{\sqrt[3]{23}} > \frac{1}{\sqrt[4]{61}}$

(D) $\frac{1}{\sqrt[3]{23}} > \frac{1}{\sqrt[4]{61}} > \frac{1}{\sqrt{8}}$

$2 < 3$
 $\frac{1}{2} > \frac{1}{3}$

$23^{\frac{1 \times 4}{3 \times 4}}$ $8^{\frac{1 \times 6}{2 \times 6}}$ $61^{\frac{1 \times 3}{4 \times 3}}$

$23^4 > 8^3 > 61^3$

$\sqrt[5]{29} > \sqrt[5]{12}$

$(8^2)^3 > 61^3$

$$5\sqrt{8} - \sqrt{2} + 5\sqrt{50} - 2^{\frac{5}{2}}$$

~~(A) $30\sqrt{2}$~~

(B) $8\sqrt{10}$

(C) $4\sqrt{15}$

(D) $12\sqrt{5}$

$$2^{\frac{5}{2}} = \sqrt{2^2 \times 2^2 \times 2}$$

$$5 \times 2\sqrt{2} - \sqrt{2} + 25\sqrt{2}$$

$$- 4\sqrt{2}$$

$$30\sqrt{2}$$

$$\sqrt{30 - \sqrt{29 - \sqrt{20 - \sqrt{16}}}}$$

- ~~(A) 5~~
- (B) 4
- (C) 6
- (D) 3

Find correct order?

(A) $\sqrt{14} - \sqrt{8} > \sqrt{12} - \sqrt{6} > \sqrt{11} - \sqrt{5} > \sqrt{13} - \sqrt{7}$

(B) $\sqrt{11} - \sqrt{5} > \sqrt{12} - \sqrt{6} > \sqrt{13} - \sqrt{7} > \sqrt{14} - \sqrt{8}$

(C) $\sqrt{14} - \sqrt{8} > \sqrt{13} - \sqrt{7} > \sqrt{12} - \sqrt{6} > \sqrt{11} - \sqrt{5}$

(D) $\sqrt{13} - \sqrt{7} > \sqrt{12} - \sqrt{6} > \sqrt{11} - \sqrt{5} > \sqrt{14} - \sqrt{8}$

$$\frac{6}{\sqrt{14} + \sqrt{8}}$$

22

$\sqrt{14}$
 $+\sqrt{8}$

$$\frac{6}{\sqrt{12} + \sqrt{6}}$$

18

$\sqrt{12}$
 $+\sqrt{6}$

$$\frac{6}{\sqrt{11} + \sqrt{5}}$$

16

$\sqrt{11}$
 $+\sqrt{5}$

$$\frac{6}{\sqrt{13} + \sqrt{7}}$$

20

$\sqrt{13}$
 $+\sqrt{7}$

Find correct order?

(A) $\sqrt{23} + \sqrt{21} > \sqrt{31} + \sqrt{13} > \sqrt{29} + \sqrt{15} > \sqrt{25} + \sqrt{19}$

(B) $\sqrt{29} + \sqrt{15} > \sqrt{23} + \sqrt{21} > \sqrt{31} + \sqrt{13} > \sqrt{25} + \sqrt{19}$

(C) $\sqrt{25} + \sqrt{19} > \sqrt{29} + \sqrt{15} > \sqrt{23} + \sqrt{21} > \sqrt{31} + \sqrt{13}$

(D) $\sqrt{23} + \sqrt{21} > \sqrt{25} + \sqrt{19} > \sqrt{29} + \sqrt{15} > \sqrt{31} + \sqrt{13}$

"

$A = \frac{1}{\sqrt{34+\sqrt{21}}}$, $B = \frac{1}{\sqrt{30+\sqrt{25}}}$, $C = \frac{1}{\sqrt{35+\sqrt{20}}}$,
 $D = \frac{1}{\sqrt{40+\sqrt{15}}}$, find correct order?

- (A) $A > D > C > B$
 (B) $D > C > A > B$
 (C) $D > A > C > B$
 (D) $C > A > B > D$

$$\begin{array}{r} 714 \\ 35 \\ \hline 714 \end{array}$$

$x = 38 + 5\sqrt{3}$ find \sqrt{x}

(A) $\frac{6\sqrt{3}-1}{2}$

(B) $\frac{5\sqrt{3}+1}{4}$

~~(C) $\frac{5\sqrt{3}+1}{\sqrt{2}}$~~

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

$$\sqrt{\frac{76 + 10\sqrt{3}}{2}}$$

$\underbrace{2 \times 5\sqrt{3} \times 1}$

=

$$\frac{5\sqrt{3} + 1}{\sqrt{2}}$$

$x = 26 + 15\sqrt{3}$ find \sqrt{x} ?

(A) $\frac{3\sqrt{3}+3}{2}$

(B) $\frac{3\sqrt{3}+5}{\sqrt{2}}$

(C) $\frac{3+\sqrt{3}}{\sqrt{2}}$

(D) $\frac{3\sqrt{3}-5}{2}$

$$\sqrt{\frac{25 + 2 \times 5 \times 3\sqrt{3}}{2}}$$

$$\frac{5 + 3\sqrt{3}}{\sqrt{2}}$$

If $a = \sqrt{7 + 2\sqrt{12}}$ and $b = \sqrt{7 - 2\sqrt{12}}$ then
find $a^3 + b^3$?

- (A) 64
- (B) 48
- ~~(C) 52~~
- (D) 42

$$a^3 + b^3 = (a+b) \left[(a+b)^2 - 3ab \right]$$

$$= 4(16 - 3 \times 1)$$

$$= 4 \times 13$$

$$= 52$$

$$\sqrt{\frac{(\sqrt{12}-\sqrt{8})(\sqrt{3}+\sqrt{2})}{5+\sqrt{24}}} = ?$$

- (A) $\sqrt{6}-\sqrt{2}$
- (B) $\sqrt{6}+\sqrt{2}$
- ~~(C) $\sqrt{6}-2$~~
- (D) $-\sqrt{6}+2$

$$\sqrt{\frac{2}{5+\sqrt{24}}} \times \frac{5-\sqrt{24}}{5-\sqrt{24}}$$

$$\sqrt{10-2\sqrt{24}}$$

$$\sqrt{10-2 \times 2 + \sqrt{16}}$$

$$\sqrt{6}-2$$

If $x = 8 - 4\sqrt{3}$ then find $\sqrt{x} + \frac{4}{\sqrt{x}}$?

(A) $2\sqrt{3}$

(B) 4

(C) $2\sqrt{6}$

(D) 12

$$\sqrt{8 - 2 \times \sqrt{2} \times \sqrt{6}}$$

$$\sqrt{x} = \sqrt{6} - \sqrt{2} + \frac{4}{\sqrt{6} - \sqrt{2}}$$
$$\frac{\sqrt{6} - \sqrt{2}}{\sqrt{6} - \sqrt{2}} + \frac{4(\sqrt{6} + \sqrt{2})}{(\sqrt{6} - \sqrt{2})(\sqrt{6} + \sqrt{2})}$$

If $\sqrt{x} = \sqrt{52+30\sqrt{3}}$ find $\sqrt{x} - \frac{2}{\sqrt{x}} = ?$

(A) 15

(B) 10

(C) $6\sqrt{3}$

(D) $12\sqrt{3}$

$$\sqrt{52 + 2 \times 5 \times 3\sqrt{3}}$$

$$\underline{3\sqrt{3} + 5} - \frac{2}{\sqrt{3\sqrt{3} + 5}}$$

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

Find the value of

$$(28 - 10\sqrt{3})^{\frac{1}{2}} - (7 + 4\sqrt{3})^{-\frac{1}{2}}$$

(A) 3 ✓

(B) 5

(C) 6

(D) 0

$$\sqrt{\frac{28 - 10\sqrt{3}}{2 \times 5 \sqrt{3}}} - \frac{1}{\sqrt{7 + 4\sqrt{3}}}$$

$\frac{2 \times 2 \times \sqrt{3}}$

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

$5 - \sqrt{3} - 2 + \sqrt{3}$

$x = 5 - \sqrt{21}$, then find $\frac{\sqrt{x}}{\sqrt{32-2x-\sqrt{21}}}$

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

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

(C) $\frac{\sqrt{5}+\sqrt{3}}{\sqrt{2}}$

(D) $\frac{\sqrt{5}-\sqrt{3}}{\sqrt{2}}$

Simplify / सरल करें:

$$1 + \frac{4}{2 + \frac{3}{5 - \frac{1}{2}}} - \frac{1}{2} (10 \div 2)$$

- (A) 1
- (B) 0
- (C) $-\frac{15}{2}$
- (D) $-\frac{1}{2}$

Simplify / सरल करें :

$$\frac{19}{43} + \frac{1}{2 + \frac{1}{3 + \frac{1}{1 + \frac{1}{4}}}}$$

(A) 1

(B) $\frac{19}{43}$

(C) $\frac{43}{19}$

(D) $\frac{38}{43}$

$$A = \frac{1}{\sqrt{28}-\sqrt{21}} \quad B = \frac{1}{\sqrt{29}-\sqrt{22}} \quad C = \frac{1}{\sqrt{31}-\sqrt{24}} \quad D = \frac{1}{\sqrt{27}-\sqrt{20}}$$

Find correct order?

(A) $C > B > A > D$

(B) $C > A > B > D$

(C) $B > A > C > D$

(D) $A > D > B > C$