Radicals

1	$1^2 =$	1	$\sqrt{1}$	$\sqrt{1 \cdot 1} = 1$
2	$2^2 =$	4	$\sqrt{4}$	$\sqrt{2 \cdot 2} = 2$
3	$3^2 =$	9	$\sqrt{9}$	$\sqrt{3 \cdot 3} = 3$
4	$4^2 =$	16	$\sqrt{16}$	$\sqrt{4 \cdot 4} = 4$
5	$5^2 =$	25	$\sqrt{25}$	$\sqrt{5 \cdot 5} = 5$
6	$6^2 =$	36	$\sqrt{36}$	$\sqrt{6 \cdot 6} = 6$
7	$7^2 =$	49	$\sqrt{49}$	$\sqrt{7 \cdot 7} = 7$
8	$8^2 =$	64	$\sqrt{64}$	$\sqrt{8 \cdot 8} = 8$
9	$9^2 =$	81	$\sqrt{81}$	$\sqrt{9 \cdot 9} = 9$
10	$10^2 =$	100	$\sqrt{100}$	$\sqrt{10 \cdot 10} = 100$

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1	$1^2 = 1$	$\sqrt{1}$	$\sqrt{1 \cdot 1} = 1$
2	$2^2 = 4$	$\sqrt{4}$	$\sqrt{2 \cdot 2} = 2$
3	$3^2 = 9$	$\sqrt{9}$	$\sqrt{3 \cdot 3} = 3$
4	$4^2 = 16$	$\sqrt{16}$	$\sqrt{4 \cdot 4} = 4$
5	$5^2 = 25$	$\sqrt{25}$	$\sqrt{5 \cdot 5} = 5$
6	$6^2 = 36$	$\sqrt{36}$	$\sqrt{6 \cdot 6} = 6$
7	$7^2 = 49$	$\sqrt{49}$	$\sqrt{7 \cdot 7} = 7$
8	$8^2 = 64$	$\sqrt{64}$	$\sqrt{8 \cdot 8} = 8$
9	$9^2 = 81$	$\sqrt{81}$	$\sqrt{9 \cdot 9} = 9$
10	$10^2 = 100$	$\sqrt{100}$	$\sqrt{10 \cdot 10} = 100$

$\sqrt{20}$

$\sqrt{4} \cdot \sqrt{5}$

$\sqrt{2 \cdot 2} \cdot \sqrt{5}$

$2\sqrt{5}$

$\sqrt{20}$

$\sqrt{4} \cdot \sqrt{5}$

$2\sqrt{5}$

1	$1^2 =$	1	$\sqrt{1}$	$\sqrt{1 \cdot 1} = 1$
2	$2^2 =$	4	$\sqrt{4}$	$\sqrt{2 \cdot 2} = 2$
3	$3^2 =$	9	$\sqrt{9}$	$\sqrt{3 \cdot 3} = 3$
4	$4^2 =$	16	$\sqrt{16}$	$\sqrt{4 \cdot 4} = 4$
5	$5^2 =$	25	$\sqrt{25}$	$\sqrt{5 \cdot 5} = 5$
6	$6^2 =$	36	$\sqrt{36}$	$\sqrt{6 \cdot 6} = 6$
7	$7^2 =$	49	$\sqrt{49}$	$\sqrt{7 \cdot 7} = 7$
8	$8^2 =$	64	$\sqrt{64}$	$\sqrt{8 \cdot 8} = 8$
9	$9^2 =$	81	$\sqrt{81}$	$\sqrt{9 \cdot 9} = 9$
10	$10^2 =$	100	$\sqrt{100}$	$\sqrt{10 \cdot 10} = 100$

$\sqrt{75}$

$\sqrt{25} \cdot \sqrt{3}$

$5\sqrt{3}$

~~100~~
~~81~~
~~49~~
~~64~~
25
16
9
4
1

$75/49 =$

$75/25 = 3$

1	$1^2 =$	1	$\sqrt{1}$	$\sqrt{1 \cdot 1} = 1$
2	$2^2 =$	4	$\sqrt{4}$	$\sqrt{2 \cdot 2} = 2$
3	$3^2 =$	9	$\sqrt{9}$	$\sqrt{3 \cdot 3} = 3$
4	$4^2 =$	16	$\sqrt{16}$	$\sqrt{4 \cdot 4} = 4$
5	$5^2 =$	25	$\sqrt{25}$	$\sqrt{5 \cdot 5} = 5$
6	$6^2 =$	36	$\sqrt{36}$	$\sqrt{6 \cdot 6} = 6$
7	$7^2 =$	49	$\sqrt{49}$	$\sqrt{7 \cdot 7} = 7$
8	$8^2 =$	64	$\sqrt{64}$	$\sqrt{8 \cdot 8} = 8$
9	$9^2 =$	81	$\sqrt{81}$	$\sqrt{9 \cdot 9} = 9$
10	$10^2 =$	100	$\sqrt{100}$	$\sqrt{10 \cdot 10} = 100$

$\sqrt{72}$

$\sqrt{9} \cdot \sqrt{8}$

$3\sqrt{8}$

$3\sqrt{4} \cdot \sqrt{2}$

$3 \cdot 2\sqrt{2}$

$6\sqrt{2}$

$\sqrt{72}$

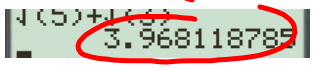
$\sqrt{36} \cdot \sqrt{2}$

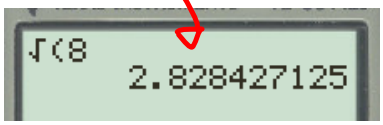
$6\sqrt{2}$

~~100~~
~~81~~
~~64~~
36
25
16
9
4
1

1	$1^2 =$	1	$\sqrt{1}$	$\sqrt{1 \cdot 1} = 1$
2	$2^2 =$	4	$\sqrt{4}$	$\sqrt{2 \cdot 2} = 2$
3	$3^2 =$	9	$\sqrt{9}$	$\sqrt{3 \cdot 3} = 3$
4	$4^2 =$	16	$\sqrt{16}$	$\sqrt{4 \cdot 4} = 4$
5	$5^2 =$	25	$\sqrt{25}$	$\sqrt{5 \cdot 5} = 5$
6	$6^2 =$	36	$\sqrt{36}$	$\sqrt{6 \cdot 6} = 6$
7	$7^2 =$	49	$\sqrt{49}$	$\sqrt{7 \cdot 7} = 7$
8	$8^2 =$	64	$\sqrt{64}$	$\sqrt{8 \cdot 8} = 8$
9	$9^2 =$	81	$\sqrt{81}$	$\sqrt{9 \cdot 9} = 9$
10	$10^2 =$	100	$\sqrt{100}$	$\sqrt{10 \cdot 10} = 100$

$\sqrt{5} + \sqrt{3} = ? \sqrt{8}$





To Add Radicals

* just like adding x's and y's

$5x + 3y$

$\sqrt{5} + \sqrt{3}$ answer

$5x + 5x = (5+5)x$

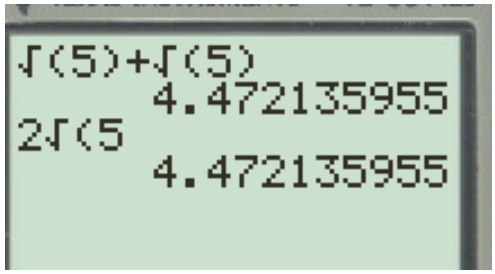
$1\sqrt{5} + 1\sqrt{5} = 10x$

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

$3\sqrt{5} + 7\sqrt{5} = 10\sqrt{5}$

$\sqrt{5}+\sqrt{3} \neq \sqrt{8}$

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



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$3\sqrt{5} + 2\sqrt{6} - 4\sqrt{5}$

$-1\sqrt{5} + 2\sqrt{6}$

$-\sqrt{5} + 2\sqrt{6}$

$\sqrt{72} + \sqrt{32} + \sqrt{5}$

$\sqrt{36}\cdot\sqrt{2}$ $\sqrt{16}\cdot\sqrt{2}$

$6\sqrt{2} + 4\sqrt{2} + \sqrt{5}$

$10\sqrt{2} + \sqrt{5}$

100
81
64
49
36
25
16
9
4
1

Radical in denominator "bottom"

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

Raditanalize denominator

$$\frac{1}{\sqrt{2}} \cdot \frac{\sqrt{2}}{\sqrt{2}} = \frac{\sqrt{2}}{\sqrt{4}} = \frac{\sqrt{2}}{2}$$

$$\frac{5}{\sqrt{3}} \cdot \frac{\sqrt{3}}{\sqrt{3}} = \frac{5\sqrt{3}}{\sqrt{9}} = \frac{5\sqrt{3}}{3}$$

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

$$\frac{8}{\sqrt{2}} = \boxed{\frac{8\sqrt{2}}{2}}$$

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

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

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

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

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

FOIL $\Rightarrow (2+\sqrt{5})(2-\sqrt{5})$

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

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

$4 - 5$

$= -1$

(1) $\sqrt{8} + \sqrt{3}$

(2) $2\sqrt{20} + \sqrt{32}$

(3) $\frac{3}{\sqrt{8}}$

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

(5) $\frac{6}{2+\sqrt{3}}$

(6) $\frac{5}{\sqrt{2}}$

(7) $\sqrt{12} - 3\sqrt{8} + 2\sqrt{20}$

Jan 7-8:05 AM

(1) $\sqrt{8} + \sqrt{3}$

$\sqrt{4} \cdot \sqrt{2}$

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

$2x + y$

~~25~~
~~16~~
~~9~~
4
1

2)

$2\sqrt{20} + \sqrt{32}$

$2\sqrt{4 \cdot 5} \quad \sqrt{16 \cdot 2}$

$2 \cdot 2 \cdot \sqrt{5} \quad 4\sqrt{2}$

$4\sqrt{5} + 4\sqrt{2}$

(3) $\frac{3}{\sqrt{8}}$ change to Not $\sqrt{}$

How? $\frac{3}{\sqrt{8}} \cdot \frac{\sqrt{8}}{\sqrt{8}} = \frac{3\sqrt{8}}{8}$ $\therefore \boxed{\frac{6\sqrt{2}}{8}}$

can go further

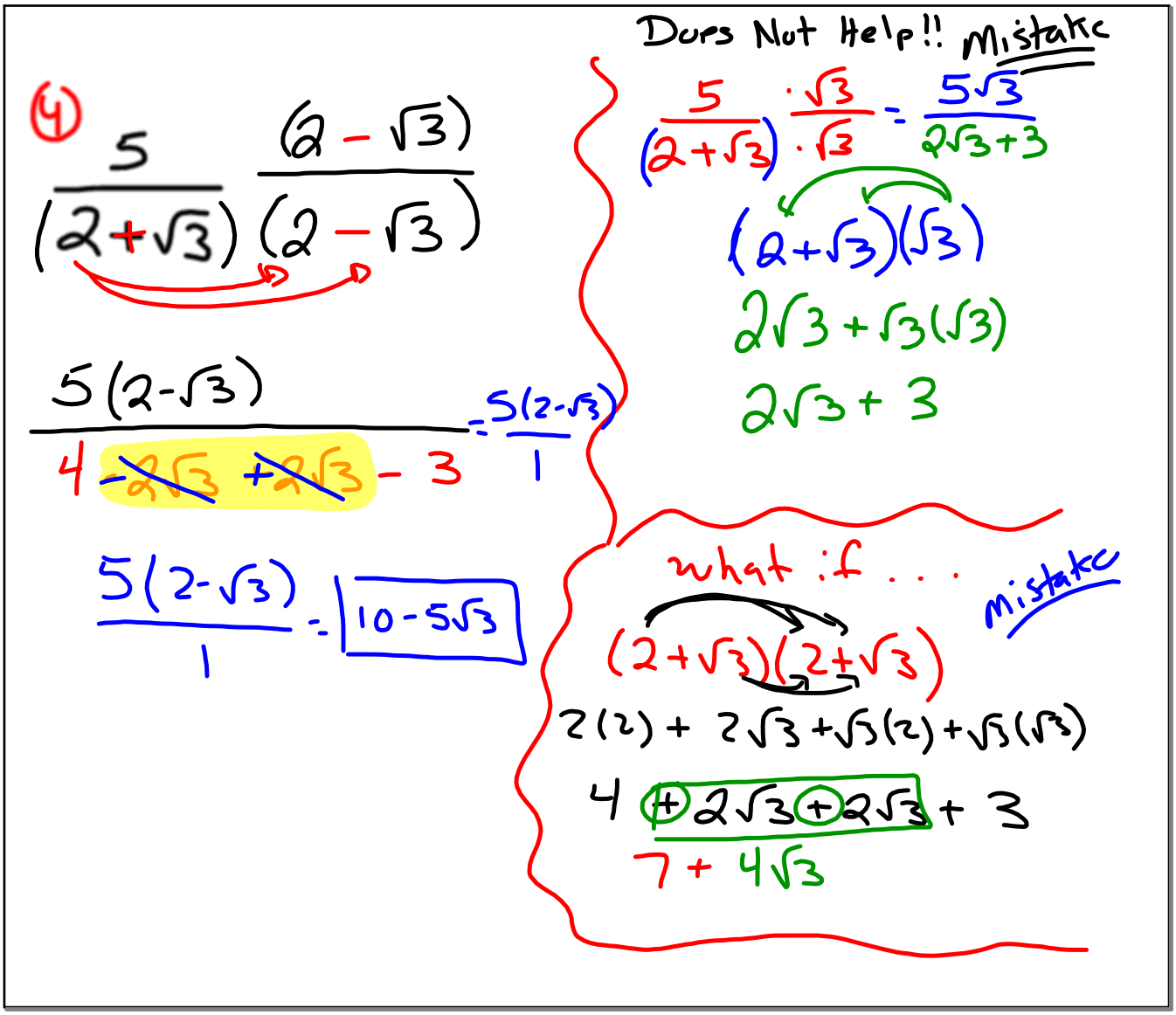
$3\sqrt{8} = 6\sqrt{2}$

$3 \cdot \sqrt{4} \cdot \sqrt{2}$

$3 \cdot 2 \cdot \sqrt{2}$

$6\sqrt{2}$

$\frac{3\cancel{6}\sqrt{2}}{4\cancel{8}} = \boxed{\frac{3\sqrt{2}}{4}}$


Does Not Help!! Mistake
(4) $\frac{5}{(2+\sqrt{3})}\cdot\frac{(2-\sqrt{3})}{(2-\sqrt{3})}$
$\frac{5(2-\sqrt{3})}{4-2\sqrt{3}+2\sqrt{3}-3} = \frac{5(2-\sqrt{3})}{1}$
$\frac{5(2-\sqrt{3})}{1} = 10-5\sqrt{3}$
$\frac{5}{(2+\sqrt{3})}\cdot\frac{\sqrt{3}}{\sqrt{3}} = \frac{5\sqrt{3}}{2\sqrt{3}+3}$
$(2+\sqrt{3})(\sqrt{3})$
$2\sqrt{3}+\sqrt{3}(\sqrt{3})$
$2\sqrt{3}+3$
what if . . .
Mistake
$(2+\sqrt{3})(2+\sqrt{3})$
$2(2)+2\sqrt{3}+\sqrt{3}(2)+\sqrt{3}(\sqrt{3})$
$4+2\sqrt{3}+2\sqrt{3}+3$
$7+4\sqrt{3}$

(6) $\frac{5}{\sqrt{2}} \cdot \frac{\sqrt{2}}{\sqrt{2}} = \frac{5\sqrt{2}}{2}$

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7

$\sqrt{12} + 3\sqrt{8} + 2\sqrt{20}$

$\sqrt{4} \cdot 3 \quad \sqrt{4} \cdot \sqrt{2} \quad \sqrt{4} \cdot \sqrt{5}$

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

$2\sqrt{3} - 6\sqrt{2} + 4\sqrt{5}$

(5) $\dfrac{6}{(2+\sqrt{3})(2-\sqrt{3})} \cdot \dfrac{(2-\sqrt{3})}{(2-\sqrt{3})}$

$\dfrac{6(2-\sqrt{3})}{4 - 2\sqrt{3} + 2\sqrt{3} - 3}$

$\dfrac{6(2-\sqrt{3})}{1} = 12 - 6\sqrt{3}$

(1) $\sqrt{8} + \sqrt{3}$

(2) $2\sqrt{20} + \sqrt{32}$

(3) $\frac{3}{\sqrt{8}}$

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

(5) $\frac{6}{2+\sqrt{3}}$

(6) $\frac{5}{\sqrt{2}}$

(7) $\sqrt{12} - 3\sqrt{8} + 2\sqrt{20}$

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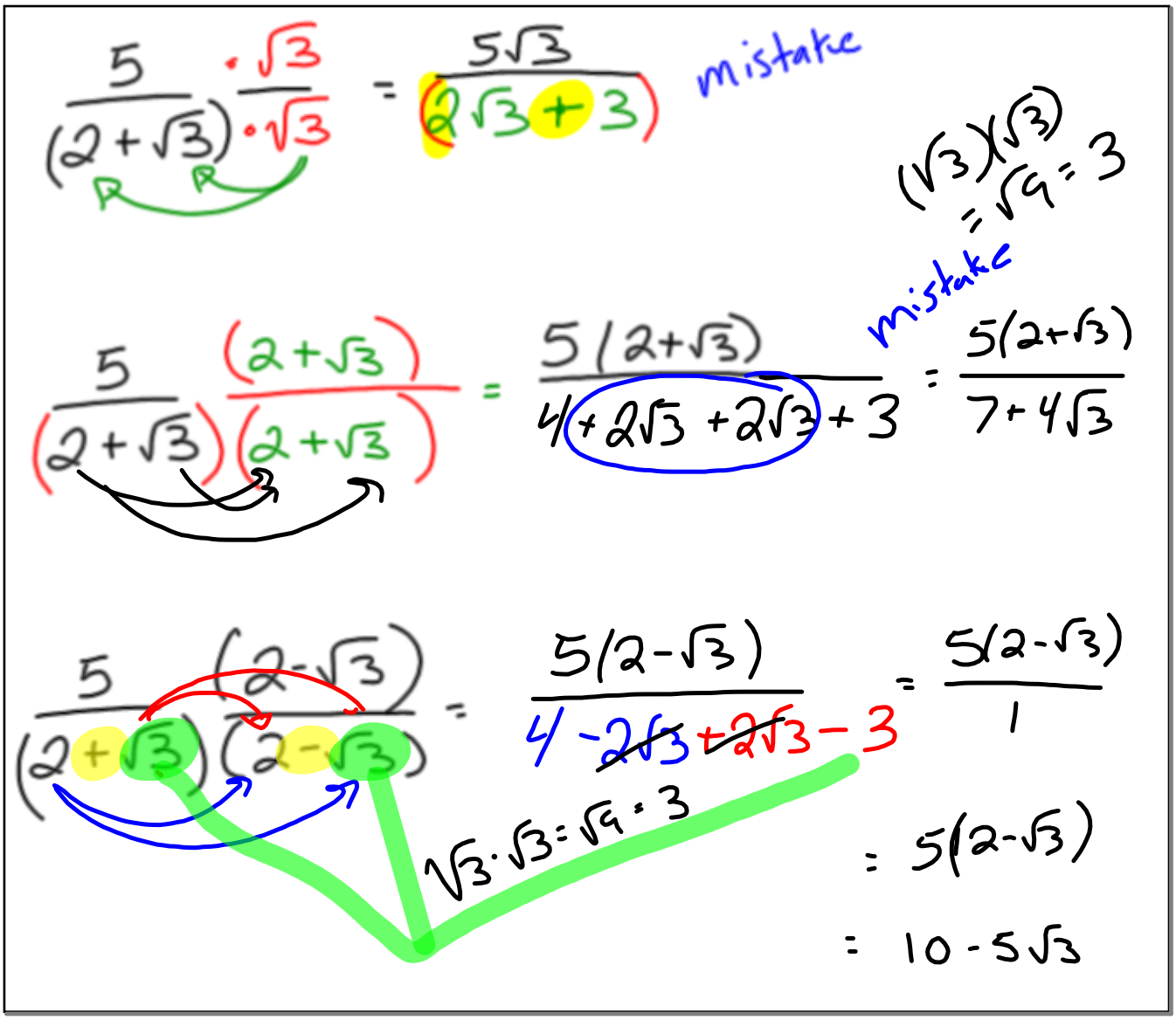
mistake
mistake
$\sqrt{3}\cdot\sqrt{3}=\sqrt{9}=3$
$=5(2-\sqrt{3})$
$=10-5\sqrt{3}$

(1) $\sqrt{8} + \sqrt{3}$

$\sqrt{4} \cdot \sqrt{2}$

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

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

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(2) $2\sqrt{20} + \sqrt{32}$

$2 \cdot \sqrt{4}\sqrt{5} + \sqrt{16} \cdot \sqrt{2}$

$2 \cdot 2 \cdot \sqrt{5} + 4\sqrt{2}$

$4\sqrt{5} + 4\sqrt{2}$

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(3) $\frac{3}{\sqrt{8}} \cdot \frac{\sqrt{8}}{\sqrt{8}} = \frac{3\sqrt{8}}{8}$ Not Done

$\sqrt{8} \cdot \sqrt{8} = \sqrt{64} = 8$

$= \frac{3 \cdot 2\sqrt{2}}{8}$ ($\sqrt{8} = 2\sqrt{2}$)

$= \frac{3\cancel{6}\sqrt{2}}{4\cancel{8}}$

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

$\sqrt{8}$

$\sqrt{4}\sqrt{2}$

$2\sqrt{2}$

$\sqrt{8} = 2\sqrt{2}$

(4) $\dfrac{5}{2+\sqrt{3}} \cdot \dfrac{(2-\sqrt{3})}{(2-\sqrt{3})} = \dfrac{5(2-\sqrt{3})}{4-2\sqrt{3}+2\sqrt{3}-3}$

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

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(5) $\dfrac{6}{(2+\sqrt{3})} \cdot \dfrac{(2-\sqrt{3})}{(2-\sqrt{3})} = \dfrac{6(2-\sqrt{3})}{4 - 2\sqrt{3} + 2\sqrt{3} - 3}$

$\therefore \dfrac{6(2-\sqrt{3})}{1} = 6(2-\sqrt{3})$

what if ... $\dfrac{6(2-\sqrt{3})}{2}$

(6) $\frac{5}{\sqrt{2}}\frac{\sqrt{2}}{\sqrt{2}} \therefore \frac{5\sqrt{2}}{2}$

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Radicals

1	$1 \cdot 1 = 1^2 =$	1	$\sqrt{1} = \sqrt{1 \cdot 1} = 1$
2	$2 \cdot 2 = 2^2 =$	4	$\sqrt{4} = \sqrt{2 \cdot 2} = 2$
3	$3 \cdot 3 = 3^2 =$	9	$\sqrt{9} = \sqrt{3 \cdot 3} = 3$
4	$4 \cdot 4 = 4^2 =$	16	$\sqrt{16} = \sqrt{4 \cdot 4} = 4$
5	$5 \cdot 5 = 5^2 =$	25	$\sqrt{25} = \sqrt{5 \cdot 5} = 5$
6	$6 \cdot 6 = 6^2 =$	36	$\sqrt{36} = \sqrt{6 \cdot 6} = 6$
7	$7 \cdot 7 = 7^2 =$	49	$\sqrt{49} = \sqrt{7 \cdot 7} = 7$
8	$8 \cdot 8 = 8^2 =$	64	$\sqrt{64} = \sqrt{8 \cdot 8} = 8$
9	$9 \cdot 9 = 9^2 =$	81	$\sqrt{81} = \sqrt{9 \cdot 9} = 9$
10	$10 \cdot 10 = 10^2 =$	100	$\sqrt{100} = \sqrt{10 \cdot 10} = 10$

Jan 7-7:12 AM

1	$1 \cdot 1 = 1^2 =$	1	$\sqrt{1} = \sqrt{1 \cdot 1} = 1$
2	$2 \cdot 2 = 2^2 =$	4	$\sqrt{4} = \sqrt{2 \cdot 2} = 2$
3	$3 \cdot 3 = 3^2 =$	9	$\sqrt{9} = \sqrt{3 \cdot 3} = 3$
4	$4 \cdot 4 = 4^2 =$	16	$\sqrt{16} = \sqrt{4 \cdot 4} = 4$
5	$5 \cdot 5 = 5^2 =$	25	$\sqrt{25} = \sqrt{5 \cdot 5} = 5$
6	$6 \cdot 6 = 6^2 =$	36	$\sqrt{36} = \sqrt{6 \cdot 6} = 6$
7	$7 \cdot 7 = 7^2 =$	49	$\sqrt{49} = \sqrt{7 \cdot 7} = 7$
8	$8 \cdot 8 = 8^2 =$	64	$\sqrt{64} = \sqrt{8 \cdot 8} = 8$
9	$9 \cdot 9 = 9^2 =$	81	$\sqrt{81} = \sqrt{9 \cdot 9} = 9$
10	$10 \cdot 10 = 10^2 =$	100	$\sqrt{100} = \sqrt{10 \cdot 10} = 10$

~~100~~
~~81~~
~~64~~
~~49~~
~~36~~
~~25~~
~~16~~
~~9~~
4
1

$\sqrt{20}$

$\sqrt{10} \cdot \sqrt{2}$

$\sqrt{20}$

$\sqrt{4} \cdot \sqrt{5}$

$\sqrt{2} \cdot \sqrt{2} \cdot \sqrt{5}$

$2\sqrt{5}$

1	$1 \cdot 1 = 1^2 =$	1	$\sqrt{1} = \sqrt{1 \cdot 1} = 1$
2	$2 \cdot 2 = 2^2 =$	4	$\sqrt{4} = \sqrt{2 \cdot 2} = 2$
3	$3 \cdot 3 = 3^2 =$	9	$\sqrt{9} = \sqrt{3 \cdot 3} = 3$
4	$4 \cdot 4 = 4^2 =$	16	$\sqrt{16} = \sqrt{4 \cdot 4} = 4$
5	$5 \cdot 5 = 5^2 =$	25	$\sqrt{25} = \sqrt{5 \cdot 5} = 5$
6	$6 \cdot 6 = 6^2 =$	36	$\sqrt{36} = \sqrt{6 \cdot 6} = 6$
7	$7 \cdot 7 = 7^2 =$	49	$\sqrt{49} = \sqrt{7 \cdot 7} = 7$
8	$8 \cdot 8 = 8^2 =$	64	$\sqrt{64} = \sqrt{8 \cdot 8} = 8$
9	$9 \cdot 9 = 9^2 =$	81	$\sqrt{81} = \sqrt{9 \cdot 9} = 9$
10	$10 \cdot 10 = 10^2 =$	100	$\sqrt{100} = \sqrt{10 \cdot 10} = 10$

$\sqrt{18}$

$\sqrt{9} \cdot \sqrt{2}$

$3\sqrt{2}$

$\sqrt{24}$

$\sqrt{4} \cdot \sqrt{6}$

$2\sqrt{6}$

$\sqrt{24}$

$\sqrt{12} \cdot \sqrt{2}$

$\sqrt{4} \cdot \sqrt{3} \cdot \sqrt{2}$

$2\sqrt{3} \cdot \sqrt{2}$

$2\sqrt{6}$

$\sqrt{24}$

$\sqrt{8} \cdot \sqrt{3}$

$\sqrt{4} \cdot \sqrt{2} \cdot \sqrt{3}$

$2 \cdot \sqrt{2} \cdot \sqrt{3}$

$2 \cdot \sqrt{6}$

Jan 7-10:27 AM

1	$1 \cdot 1 = 1^2 =$	1	$\sqrt{1} = \sqrt{1 \cdot 1} = 1$
2	$2 \cdot 2 = 2^2 =$	4	$\sqrt{4} = \sqrt{2 \cdot 2} = 2$
3	$3 \cdot 3 = 3^2 =$	9	$\sqrt{9} = \sqrt{3 \cdot 3} = 3$
4	$4 \cdot 4 = 4^2 =$	16	$\sqrt{16} = \sqrt{4 \cdot 4} = 4$
5	$5 \cdot 5 = 5^2 =$	25	$\sqrt{25} = \sqrt{5 \cdot 5} = 5$
6	$6 \cdot 6 = 6^2 =$	36	$\sqrt{36} = \sqrt{6 \cdot 6} = 6$
7	$7 \cdot 7 = 7^2 =$	49	$\sqrt{49} = \sqrt{7 \cdot 7} = 7$
8	$8 \cdot 8 = 8^2 =$	64	$\sqrt{64} = \sqrt{8 \cdot 8} = 8$
9	$9 \cdot 9 = 9^2 =$	81	$\sqrt{81} = \sqrt{9 \cdot 9} = 9$
10	$10 \cdot 10 = 10^2 =$	100	$\sqrt{100} = \sqrt{10 \cdot 10} = 10$

$\sqrt{72}$

$\sqrt{9} \cdot \sqrt{8}$

$3\sqrt{8}$

$3 \cdot \sqrt{4} \cdot \sqrt{2}$

$3 \cdot 2 \cdot \sqrt{2}$

$6\sqrt{2}$

$\sqrt{72}$

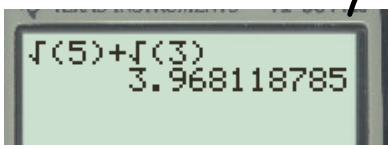
$\sqrt{36} \cdot \sqrt{2}$

$6\sqrt{2}$

~~100~~
~~81~~
~~64~~
~~49~~
36
25
16
9
4

$5x + 3y$

$\sqrt{5} + \sqrt{3} \neq \sqrt{8}$



$5x + 3y + 2x - y \Rightarrow 7x + 2y$

$2\sqrt{5} + \sqrt{3} + 4\sqrt{5} + 3\sqrt{3} \Rightarrow 6\sqrt{5} + 4\sqrt{3}$

$2\sqrt{7} - 3\sqrt{2} - \sqrt{7} + 5\sqrt{2}$

$2\sqrt{7} - \sqrt{7} - 3\sqrt{2} + 5\sqrt{2}$

$\sqrt{7} + 2\sqrt{2}$

$\sqrt{8} + \sqrt{18}$

$\sqrt{4}\cdot\sqrt{2} \qquad \sqrt{9}\cdot\sqrt{2}$

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

$5\sqrt{2}$

$\sqrt{27} - 3\sqrt{2} + 5\sqrt{48}$

$\sqrt{9}\cdot\sqrt{3} \qquad \sqrt{16}\cdot\sqrt{3}$

$3\sqrt{3} - 3\sqrt{2} + 5\cdot 4\sqrt{3}$

$3\sqrt{3} - 3\sqrt{2} + 20\sqrt{3}$

$23\sqrt{3} - 3\sqrt{2}$

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

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

Rationalize Denominator "bottom"

$$\frac{5}{\sqrt{2}} \cdot \frac{\sqrt{2}}{\sqrt{2}} = \frac{5\sqrt{2}}{\sqrt{4}} = \frac{5\sqrt{2}}{2}$$

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

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

mistake

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

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