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organizer)

$(4xy - 10x + 4y) - (13x + 10xy - y^2)$

$-6xy - 23x + 4y + y^2$

Algebra 1   Name:

List out all the Perfect Squares

$\sqrt{1}$ $\sqrt{4}$ $\sqrt{9}$ $\sqrt{16}$ $\sqrt{25}$ $\sqrt{36}$ $\sqrt{49}$ $\sqrt{64}$

$\sqrt{81}$ $\sqrt{100}$ $\sqrt{121}$ $\sqrt{144}$ $\sqrt{169}$ $\sqrt{196}$ $\sqrt{225}$ $\sqrt{256}$

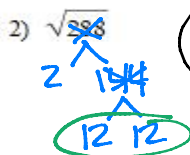$\sqrt{289}$ $\sqrt{324}$ $\sqrt{361}$ $\sqrt{400}$ $\sqrt{10{,}000}$ 100

Use prime factorization (factor tree) to simplify each radicand (inside number).

It takes two of the same number or variable to become an outside term.

Multiply all outside numbers and variables to obtain only one outside term.

Multiply all inside numbers and variables to obtain only one inside term.
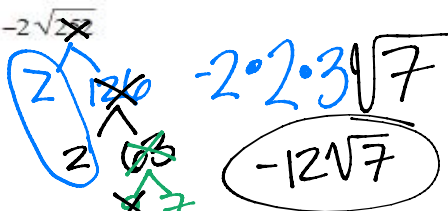
1) $\sqrt{98}$

2) $\sqrt{288}$

$12\sqrt{2}$

2   144
    12 12

3) $\sqrt{512}$ $16\sqrt{2}$

2   256
    16 16

4) $\sqrt{128}$

5) $-2\sqrt{252}$

2   126
    2   63
        9   7
        3   3

$-2 \cdot 2 \cdot 3\sqrt{7}$

$-12\sqrt{7}$

6) $-\sqrt{36}$

6   6

-6

7) $6\sqrt{12}$

8) $-2\sqrt{147}$

9) $\sqrt{112x^3}$

$2X\sqrt{7x}$

10) $\sqrt{294x^2}$

$7 \cdot X \sqrt{2 \cdot 3}$

$7X\sqrt{6}$

11) $5\sqrt{150v^3}$

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

$25v\sqrt{6v}$

12) $7\sqrt{124x^4}$

$7 \cdot 2 \cdot x \cdot x \sqrt{31}$

$14X^2\sqrt{31}$

13) $\sqrt{112x^4y^3}$

$2 \cdot 2 \cdot x \cdot x \cdot y\sqrt{7y}$

$4X^2y\sqrt{7y}$

14) $\sqrt{252x^3y^2}$

$2 \cdot 3 \cdot x \cdot y\sqrt{7x}$

$6xy\sqrt{7x}$

15) $-4\sqrt{54xy^3}$

$-4 \cdot 3 \cdot y\sqrt{2 \cdot 3 \cdot x \cdot y}$

$-12y\sqrt{6xy}$

16) $-8\sqrt{360m^4n^3}$

$-8 \cdot 3 \cdot 2 \cdot m \cdot m \cdot n\sqrt{5 \cdot 2 \cdot n}$

$-48m^2n\sqrt{10n}$

17) $\sqrt{70x^8y^7z}$

$xxxxyyy\sqrt{70yz}$

$X^4y^3\sqrt{70yz}$

18) $\sqrt{125m^2p^4q^4}$

$5mppqq\sqrt{5}$

$5mp^2q^2\sqrt{5}$

19) $-6\sqrt{98pq^4r^4}$

$2 \cdot 6 \cdot q \cdot q \cdot r \cdot r\sqrt{2p}$

$-12q^2r^2\sqrt{2p}$

20) $-\sqrt{64ab^3c^3}$

$-8bc\sqrt{bca}$

$-8bc\sqrt{abc}$