Simplify.

This is combining like terms after you simplify each of the radicals.

$$5\sqrt{18} + 6\sqrt{12} - \sqrt{8} - 2\sqrt{27}$$

9·2   4·3   4·2   9·3

$15\sqrt{2}$ $+12\sqrt{3}$ $-2\sqrt{2}$ $-6\sqrt{3}$

$13\sqrt{2} + 6\sqrt{3}$

Like Radicals must have:
• same index
• same radicand

Simplify.

$$10\sqrt[3]{54} + \sqrt{8} - 2\sqrt[3]{16} + 5\sqrt{32}$$

27·2   4·2   8·2   16·2

$30\sqrt[3]{2} + 2\sqrt{2} - 4\sqrt[3]{2} + 20\sqrt{2}$

$= 22\sqrt{2} + 26\sqrt[3]{2}$

Simplify.

This is Distributive Property

$$\sqrt{2}\,(7 - \sqrt{8}\,)$$

$= 7\sqrt{2} - \sqrt{16}$

$= 7\sqrt{2} - 4$

Simplify.

$$9\sqrt{5}\,(2 - 3\sqrt{5}\,)$$

$9·2·\sqrt{5} - 9·3·\sqrt{5}·\sqrt{5}$

$= 18\sqrt{5} - 27·5$

$= 18\sqrt{5} - 135$

Simplify.

$$2\sqrt{3}(7\sqrt{2}+5\sqrt{3})$$

$2\cdot5\cdot\sqrt{3}\cdot\sqrt{3}$

$2\cdot7\cdot\sqrt{3}\cdot\sqrt{2}$

$14\sqrt{6} + 10\cdot3$

$= \boxed{14\sqrt{6}+30}$

Sec 7-3: Binomial Radical Expressions.

Simplify.

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

$\boxed{30+5\sqrt{3}-6\sqrt{2}-\sqrt{6}}$

There are no like radicals, therefore, none of the terms can be combined.

Expand.

$$(2-\sqrt{3})(4+10\sqrt{3})$$

$8+20\sqrt{3}-4\sqrt{3}-10\sqrt{9}$

$\boxed{-22+16\sqrt{3}}$

$-10\cdot3$
$\underline{\quad\quad}$
-30

Expand.

$$(2-\sqrt{27})(11+\sqrt{12})$$

$9\cdot3 \qquad 4\cdot3$

$(2-3\sqrt{3})(11+2\sqrt{3})$

$22+4\sqrt{3}-33\sqrt{3}-6\sqrt{9}$

-18

$\boxed{4-29\sqrt{3}}$