Algebra 2

Name _____ ID: 1

Operations with Radicals

Date _____ Period ____

Simplify.

1) $2\sqrt{6} - \sqrt{6} - \sqrt{8}$

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

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

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

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

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

4) $2\sqrt{54} - 2\sqrt{8} + 3\sqrt{6}$

$9\sqrt{6} - 4\sqrt{2}$

5) $2\sqrt[4]{5} + 2\sqrt[4]{5}$

$4\sqrt[4]{5}$

6) $-\sqrt[4]{162} + 2\sqrt[4]{32}$

$\sqrt[4]{2}$

7) $3\sqrt[3]{2} - 2\sqrt[3]{-2}$

$5\sqrt[3]{2}$

8) $-\sqrt[4]{3} + 3\sqrt[4]{243}$

$8\sqrt[4]{3}$

9) $-3\sqrt[3]{3v^3} \cdot \sqrt[3]{-9v^3}$

$9v^3$

10) $\sqrt[3]{50x^4} \cdot \sqrt[3]{20x}$

$10x\sqrt[3]{x^2}$

11) $\sqrt[3]{4a^3} \cdot \sqrt[3]{4a^4}$

$2a^2\sqrt[3]{2a}$

12) $\sqrt[3]{12n} \cdot \sqrt[3]{-6n^3}$

$-2n\sqrt[3]{9n}$

13) $5\sqrt{5}(-4\sqrt{5} + \sqrt{3})$

$-100 + 5\sqrt{15}$

14) $\sqrt{5}(\sqrt{3} - 5\sqrt{10})$

$\sqrt{15} - 25\sqrt{2}$

15) $-5\sqrt{10}(-5\sqrt{6} + 2\sqrt{5})$

$50\sqrt{15} - 50\sqrt{2}$

16) $3\sqrt{3}(3 + \sqrt{3})$

$9\sqrt{3} + 9$

17) $(4 + \sqrt{3})(-2 + \sqrt{3})$

$-5 + 2\sqrt{3}$

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

$-1 - 2\sqrt{6}$

19) $(-3\sqrt{2} - \sqrt{5})(\sqrt{2} + \sqrt{5})$

$-11 - 4\sqrt{10}$

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

$3 - 3\sqrt{3}$