Geometry

Name_____ ID: 1

Review - Add/Subtracting & Multiplying Radicals

Date_____ Period____

Simplify.

1) $\sqrt{100} =$ 10

2) $\sqrt{54}$ $3\sqrt{6}$

9 6

3 3

3) $\sqrt{64} =$ 8

4) $\sqrt{288}$ $12\sqrt{2}$

2 144

12 12

5) $\sqrt{128}$ $8\sqrt{2}$

64 2

8 8

6) $\sqrt{384}$ $8\sqrt{6}$

4 96

4 24 < 4 6 (3 2)

7) $2\sqrt{8} - 3\sqrt{6} - 3\sqrt{6}$

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

4 2

2 2

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

8) $2\sqrt{54} + 3\sqrt{54} - 3\sqrt{18}$

$5\sqrt{54} - 3\sqrt{18} < \frac{9}{2}$ (3 3)

9 6

3 3

$15\sqrt{6} - 9\sqrt{2}$

9) $2\sqrt{6} - 3\sqrt{8} - 2\sqrt{2}$

4 2

2 2

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

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

10) $-2\sqrt{24} - 3\sqrt{2} - 2\sqrt{6}$

4 6

2 2

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

$-6\sqrt{6} - 3\sqrt{2}$

11) $-\sqrt{6}-3\sqrt{18}-2\sqrt{2}$

$9\cdot 2$, $3\cdot 3$

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

$\boxed{-\sqrt{6}-11\sqrt{2}}$

12) $2\sqrt{27}-2\sqrt{3}+3\sqrt{6}$

$9\cdot 3$, $3\cdot 3$

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

$\boxed{4\sqrt{3}+3\sqrt{6}}$

13) $-\sqrt{2}\cdot\sqrt{5}$

$\boxed{-\sqrt{10}}$

14) $-5\sqrt{2}\cdot\sqrt{5}$

$\boxed{-5\sqrt{10}}$

15) $2\sqrt{15}(5+\sqrt{5})$

$10\sqrt{15}+2\sqrt{75}$

$25\cdot 3$, $5\cdot 5$

$\boxed{10\sqrt{15}+10\sqrt{3}}$

16) $\sqrt{5}(4+\sqrt{5})$

$4\sqrt{5}+\sqrt{25}$

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

17) $-2\sqrt{10}(\sqrt{10}+\sqrt{2})$

$-2\sqrt{100}-2\sqrt{20}$ $<^{4}_{5}$ $<^{2}_{2}$

$\boxed{-20-4\sqrt{5}}$

18) $(\sqrt{3}-4)(\sqrt{3}-3)$

$\sqrt{9}-3\sqrt{3}-4\sqrt{3}+12$

$\boxed{15-7\sqrt{3}}$

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

$-5\sqrt{25}+\sqrt{10}+20\sqrt{10}-4\sqrt{4}$

$-25+21\sqrt{10}-8$

$\boxed{-33+21\sqrt{10}}$

20) $(\sqrt{3}+\sqrt{8})^2$

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

$3\sqrt{9}+\sqrt{24}+\sqrt{24}+\sqrt{64}$

$11+2\sqrt{24}$ $<^{4}_{6}$ $<^{2}_{3}$

$\boxed{11+4\sqrt{6}}$