Geometry Name Key ID: 1

Adding and Subtracting Radicals

Date _____ Period ____

Simplify.

1) $-3\sqrt{5} - 3\sqrt{5}$

$-6\sqrt{5}$

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

$0\sqrt{2} = 0$

3) $-1\sqrt{3} + 3\sqrt{3}$

$2\sqrt{3}$

4) $-1\sqrt{6} - 2\sqrt{6}$

$-3\sqrt{6}$

5) $-2\sqrt{27} - 3\sqrt{3}$

$9 \cdot 3$, $(3 \cdot 3)$

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

$-6\sqrt{3} - 3\sqrt{3} = -9\sqrt{3}$

6) $-3\sqrt{8} - 2\sqrt{18}$

8: $4 \cdot 2$, $(2 \cdot 2)$; 18: $9 \cdot 2$, $(3 \cdot 3)$

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

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

$-12\sqrt{2}$

7) $-\sqrt{10} - 3\sqrt{32} + 3\sqrt{8}$

$-1\sqrt{10} - 3 \cdot 4\sqrt{2} + 3 \cdot 2\sqrt{2}$

$-1\sqrt{10} - 12\sqrt{2} + 6\sqrt{2}$

$-\sqrt{10} - 6\sqrt{2}$

$10\sqrt{7} - 2\sqrt{5}$

32: $4 \cdot 8$, $(2 \cdot 2)$, $4 \cdot 2$, $(2 \cdot 2)$

8) $-2\sqrt{125} + 2\sqrt{175} + 2\sqrt{80}$

125: $25 \cdot 5$, $(5 \cdot 5)$; 175: $25 \cdot 7$, $(5 \cdot 5)$; 80: $8 \cdot 10$, 4, $(2 \cdot 2)$, 5

$-2 \cdot 5\sqrt{5} + 2 \cdot 5\sqrt{7} + (2 \cdot 2)$

$-10\sqrt{5} + 10\sqrt{7} + 2 \cdot 4\sqrt{5} \Rightarrow 8\sqrt{5}$

9) $2\sqrt{96} - \sqrt{72} - 5\sqrt{50} + 3\sqrt{150}$

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

$8\sqrt{6} - 6\sqrt{2} - 25\sqrt{2} + 15\sqrt{6}$

$23\sqrt{6} - 31\sqrt{2}$

96: $6 \cdot 16$, $2 \cdot 3$, $(4 \cdot 4)$

72: $9 \cdot 8$, $(3 \cdot 3)$, $4 \cdot 2$, $(2 \cdot 2)$ $\rightarrow 6\sqrt{2}$

50: $2 \cdot 25$, $(5 \cdot 5)$

150: $15 \cdot 10$, $(3 \cdot 5)$, $(2 \cdot 5)$

10) $-\sqrt{2} + 2\sqrt{40} + 2\sqrt{27} - 3\sqrt{10}$

$-1\sqrt{2} + 4\sqrt{10} + 6\sqrt{3} - 3\sqrt{10}$

$-\sqrt{2} + 1\sqrt{10} + 6\sqrt{3}$

40: $4 \cdot 10$, $(2 \cdot 2)$, $2 \cdot 5$

27: $9 \cdot 3$, $(3 \cdot 3)$