Geometry
Radical Review

Name Key Period _____ A#_____

#1-5 Simplify.

EXAMPLE:

$\sqrt{18} = \sqrt{9}\cdot\sqrt{2}$
$= 3\sqrt{2}$

1) $\sqrt{64}$
8

2) $\sqrt{8}$
$\sqrt{4}\cdot\sqrt{2}$
$2\sqrt{2}$

3) $\sqrt{20}$
$\sqrt{4}\cdot\sqrt{5}$
$2\sqrt{5}$

4) $\sqrt{27}$
$\sqrt{9}\cdot\sqrt{3}$
$3\sqrt{3}$

5) $\sqrt{28}$
$\sqrt{4}\cdot\sqrt{7}$
$2\sqrt{7}$

#6-10 Add or subtract.

EXAMPLE:

$2\sqrt{5}+3\sqrt{5}+\sqrt{5}+7\sqrt{3}$
$= 6\sqrt{5}+7\sqrt{3}$

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

7) $10\sqrt{6}-3\sqrt{6}$
$7\sqrt{6}$

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

9) $6\sqrt{3}-\sqrt{7}-6\sqrt{7}+8\sqrt{3}$
$14\sqrt{3} - 7\sqrt{7}$

10) $15\sqrt{7}-2\sqrt{7}+10\sqrt{8}+3\sqrt{2}$
$15\sqrt{7} - 2\sqrt{7} + 20\sqrt{2} + 3\sqrt{2}$
$13\sqrt{7} + 23\sqrt{2}$
$10\sqrt{4}\cdot\sqrt{2}$
$10\cdot 2\sqrt{2}$
$20\sqrt{2}$

#11-15 Multiply and simplify.

EXAMPLE:

$2\sqrt{3}\cdot 4\sqrt{6} = 8\sqrt{18}$
$= 8\cdot\sqrt{9}\cdot\sqrt{2}$
$= 8\cdot 3\cdot\sqrt{2}$
$= 24\sqrt{2}$

11) $6\sqrt{2}\cdot 3\sqrt{2} = 18\sqrt{4}$
$18\cdot 2$
36

12) $\sqrt{2}\cdot\sqrt{32} = \sqrt{64}$
8

13) $\sqrt{3} \cdot \sqrt{3} \cdot \sqrt{16}$

$\sqrt{9} \cdot \sqrt{16}$ OR $\sqrt{144}$

$3 \cdot 4$ 12

12

14) $2\sqrt{3} \cdot 4\sqrt{5}$

$8\sqrt{15}$

15) $2\sqrt{6} \cdot 3\sqrt{8}$

$6\sqrt{48}$

$6\sqrt{16} \cdot \sqrt{3}$

$6 \cdot 4\sqrt{3}$

$24\sqrt{3}$

#16-20 Rationalize.

EXAMPLE: $\sqrt{\frac{2}{3}} = \frac{\sqrt{2}}{\sqrt{3}} \cdot \frac{\sqrt{3}}{\sqrt{3}} = \frac{\sqrt{6}}{\sqrt{9}} = \frac{\sqrt{6}}{3}$

16) $\frac{3}{\sqrt{5}} \cdot \frac{\sqrt{5}}{\sqrt{5}} = \frac{3\sqrt{5}}{\sqrt{25}} = \frac{3\sqrt{5}}{5}$

17) $\sqrt{\frac{3}{4}} = \frac{\sqrt{3}}{\sqrt{4}} = \frac{\sqrt{3}}{2}$

18) $\sqrt{\frac{9}{7}} = \frac{\sqrt{9}}{\sqrt{7}} = \frac{3}{\sqrt{7}} \cdot \frac{\sqrt{7}}{\sqrt{7}} = \frac{3\sqrt{7}}{\sqrt{49}} = \frac{3\sqrt{7}}{7}$

19) $\frac{5}{\sqrt{3}} \cdot \frac{\sqrt{3}}{\sqrt{3}} = \frac{5\sqrt{3}}{\sqrt{9}} = \frac{5\sqrt{3}}{3}$

20) $\frac{2\sqrt{7}}{\sqrt{2}} \cdot \frac{\sqrt{2}}{\sqrt{2}} = \frac{2\sqrt{14}}{\sqrt{4}} = \frac{2\sqrt{14}}{2} = \sqrt{14}$