1) $\sqrt{4}$

2$

2) $-\sqrt{9}$

-3

3) $\sqrt{25}$

5

4) $-\sqrt{25}$

-5

5) $\sqrt{16}$

4

6) $-\sqrt{16}$

-4

7) $-\sqrt{4}$

-2

8) $\sqrt{0}$

0

9) $\sqrt{1}$

1

10) $\sqrt{49}$

7

11) $-\sqrt{49}$

-7

12) $-\sqrt{1}$

-1

13) $-\sqrt{36}$

-6

14) $\sqrt{9}$

3

15) $\sqrt{64}$

8

Geometry

Name_____

Simplifying Radicals Test Review

Date_____ Period____

Simplify.

1) $\sqrt{125}$ $\sqrt{5 \cdot 25}$

$\sqrt{5 \cdot \boxed{5 \cdot 5}}$

$= 5\sqrt{5}$

2) $\sqrt{100}$ $\sqrt{\boxed{10 \cdot 10}}$

$= 10$

3) $\sqrt{64}$ $\sqrt{8 \cdot 8}$

$= 8$

4) $\sqrt{45}$ $\sqrt{5 \cdot 9}$

$\sqrt{5 \cdot \boxed{3 \cdot 3}}$

$= 3\sqrt{5}$

5) $\sqrt{18}$ $\sqrt{2 \cdot 9}$

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

$= 3\sqrt{2}$

6) $\sqrt{20}$ $\sqrt{4 \cdot 5}$

$\sqrt{\boxed{2 \cdot 2 \cdot 5}}$

$= 2\sqrt{5}$

7) $2\sqrt{50}$ $2\sqrt{2 \cdot 25}$

$2\sqrt{2 \cdot \boxed{5 \cdot 5}}$

$2 \cdot 5 \sqrt{2}$

$= 10\sqrt{2}$

8) $4\sqrt{32}$ $4\sqrt{4 \cdot 8}$

$4\sqrt{\boxed{2 \cdot 2} \cdot \boxed{2 \cdot 2} \cdot 2}$

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

$8 \cdot 2 \sqrt{2}$

$= 16\sqrt{2}$

9) $-4\sqrt{50}$ $-4\sqrt{2 \cdot 25}$

$-4\sqrt{2 \cdot \boxed{5 \cdot 5}}$

$-4 \cdot 5 \sqrt{2}$

$= -20\sqrt{2}$

10) $5\sqrt{32}$ $5\sqrt{4 \cdot 8}$

$5\sqrt{2 \cdot \boxed{2 \cdot 2} \cdot \boxed{2 \cdot 2}}$

$5 \cdot 2 \cdot 2 \sqrt{2}$

$10 \cdot 2 \sqrt{2}$

$= 20\sqrt{2}$

Review: Solving equations with square roots. Remember to get two answers for each problem.

1) $x^2 = 64$

$X = \pm 8$

2) $x^2 = 81$

$X \pm 9$

3) $n^2 = 121$

$X = \pm 11$

4) $x^2 = 144$

$X = \pm 12$

5) $x^2 = 12$

$X = \pm \sqrt{12}$
$X = \pm \sqrt{6 \cdot 2}$
$X = \pm \sqrt{3 \cdot 2 \cdot 2}$
$X \pm 2\sqrt{3}$

16) $n^2 = 10$

$n = \pm \sqrt{10}$
$n = \pm \sqrt{2 \cdot 5}$
$n = \pm \sqrt{10}$

7) $x^2 + 5 = 23$

$\underline{\quad -5 \quad -5 \quad}$
$X^2 = 18$
$X = \pm \sqrt{18}$
$X = \pm \sqrt{2 \cdot 9}$
$X = \pm \sqrt{2 \cdot 3 \cdot 3}$
$X = \pm 3\sqrt{2}$

8) $n^2 - 2 = 40$

$\underline{\quad +2 \quad +2 \quad}$
$n^2 = 42$
$n = \pm \sqrt{42}$
$n = \pm \sqrt{2 \cdot 21}$
$n = \pm \sqrt{2 \cdot 3 \cdot 7}$
$n = \pm \sqrt{21}$

9) $n^2 = 40$

$n = \pm \sqrt{40}$
$n = \pm \sqrt{5 \cdot 8}$
$n \pm \sqrt{5 \cdot 2 \cdot 2 \cdot 2}$
$n = \pm 2\sqrt{10}$

10) $x^2 = 56$

$X = \pm \sqrt{56}$
$X = \pm \sqrt{2 \cdot 28}$
$X = \pm \sqrt{2 \cdot 2 \cdot 14}$
$X = \pm \sqrt{2 \cdot 2 \cdot 2 \cdot 7}$
$X = \pm 2\sqrt{14}$

Quotients of Square Roots

1) $\sqrt{\dfrac{4}{25}}$

$\dfrac{\sqrt{4}}{\sqrt{25}}$

$= \dfrac{2}{5}$

2) $\sqrt{\dfrac{16}{64}}$

$\dfrac{4}{8} = \dfrac{1}{2}$

3) $\dfrac{\sqrt{9}}{\sqrt{196}}$

$\dfrac{3}{14}$

4) $\sqrt{\dfrac{169}{16}}$

$\dfrac{13}{4}$

5) $\sqrt{\dfrac{3x^2}{4}}$ $\dfrac{\sqrt{3 \cdot x \cdot x}}{\sqrt{2 \cdot 2}}$

$\dfrac{x\sqrt{3}}{2}$

6) $\sqrt{\dfrac{4x^2}{9}}$ $\dfrac{\sqrt{2 \cdot 2 \cdot x \cdot x}}{\sqrt{3 \cdot 3}}$

$\dfrac{2x}{3}$

7) $\sqrt{\dfrac{20}{25}}$

$\dfrac{\sqrt{20}}{\sqrt{25}}$ $\dfrac{\sqrt{4 \cdot 5}}{\sqrt{5 \cdot 5}} = \dfrac{\sqrt{2 \cdot 2}\sqrt{5}}{5}$

$= \dfrac{2\sqrt{5}}{5}$

8) $\sqrt{\dfrac{12}{9}}$ $\dfrac{\sqrt{12}}{\sqrt{9}} = \dfrac{\sqrt{4 \cdot 3}}{\sqrt{3 \cdot 3}} = \dfrac{\sqrt{2 \cdot 2 \cdot 3}}{3}$

$= \dfrac{2\sqrt{3}}{3}$