

Name \_\_\_\_\_

If possible, simplify the expression. If any variables exist, assume that they are positive.

1)  $\sqrt{25} + \sqrt{16}$

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

3)  $6\sqrt{32x^2} - 3\sqrt{18x^2} - \sqrt{2x^2}$

4)  $\frac{\sqrt{150}}{3} - \frac{4\sqrt{6}}{3} + \frac{\sqrt{6}}{\sqrt{9}}$

Perform the indicated operation.

5) Find  $(f - g)(x)$  if  $f(x) = 9\sqrt{x} - 2$  and  $g(x) = 2\sqrt{x} - 1$

6) Find  $(f + g)(x)$  if  $f(x) = \sqrt{100x + 100}$  and  $g(x) = \sqrt{x + 1}$

Multiply, then simplify the product. If variables are present, assume they are positive.

7)  $(\sqrt{7} - 3)(\sqrt{5} + 6)$

8)  $(\sqrt{6x} + y)(\sqrt{6x} - y)$

Rationalize the denominator.

9)  $\sqrt{\frac{36}{11}}$

10)  $\frac{4a}{\sqrt{5}}$

11)  $\frac{5\sqrt{31x}}{\sqrt{x^3}}$

12)  $\frac{2}{6 - \sqrt{3}}$

13)  $\frac{10 - \sqrt{3}}{10 + \sqrt{3}}$

14)  $\frac{2\sqrt{x}}{\sqrt{x} - 3\sqrt{y}}$

Answer Key

Testname: WKS\_17.4

1) 9

2)  $6\sqrt{3}$

3)  $14x\sqrt{2}$

4)  $\frac{2\sqrt{6}}{3}$

5)  $7\sqrt{x} - 1$

6)  $11\sqrt{x+1}$

7)  $\sqrt{35} + 6\sqrt{7} - 3\sqrt{5} - 18$

8)  $6x - y^2$

9)  $\frac{6\sqrt{11}}{11}$

10)  $\frac{4a\sqrt{5}}{5}$

11)  $\frac{5\sqrt{31}}{x}$

12)  $\frac{12 + 2\sqrt{3}}{33}$

13)  $\frac{103 - 20\sqrt{3}}{97}$

14)  $\frac{2\sqrt{x}(\sqrt{x} + 3\sqrt{y})}{x - 9y}$