

Name Schlansky  
Mr. Schlansky

Date \_\_\_\_\_  
Pre Calculus

## Reducing Square Roots

Reduce the following radicals into simplest form

1.  $\sqrt{64}$

8

2.  $\sqrt{50}$

$\sqrt{25} \sqrt{2}$   
 $5\sqrt{2}$

3.  $3\sqrt{162}$

$3\sqrt{81} \sqrt{2}$

$3(9)\sqrt{2}$

$27\sqrt{2}$

4.  $2\sqrt{32}$

$2\sqrt{16} \sqrt{2}$

$2(4)\sqrt{2}$

$8\sqrt{2}$

5.  $4\sqrt{45}$

$4\sqrt{9} \sqrt{5}$

$4(3)\sqrt{5}$

$12\sqrt{5}$

6.  $2\sqrt{75}$

$2\sqrt{25} \sqrt{3}$

$2(5)\sqrt{3}$

$10\sqrt{3}$

7.  $3\sqrt{20}$

$3\sqrt{4} \sqrt{5}$

$3(2)\sqrt{5}$

$6\sqrt{5}$

8.  $5\sqrt{54}$

$5\sqrt{9} \sqrt{6}$

$5(3)\sqrt{6}$

$15\sqrt{6}$

PS  
1  
4  
9  
16  
25  
36  
49  
64  
81  
100

$$9. 3x\sqrt{48x^3y^4}$$

$$\begin{aligned} 3x \sqrt{16x^2y^4} \sqrt{3x} \\ 3x(4xy^2) \sqrt{3x} \\ 12x^2y^2 \sqrt{3x} \end{aligned}$$

$$11. 3xy^2\sqrt{98x^4y^7}$$

$$\begin{aligned} 3xy^2 \sqrt{49x^4y^6} \sqrt{2y} \\ 3xy^2(7x^2y^3) \sqrt{2y} \\ 21x^3y^5 \sqrt{2y} \end{aligned}$$

$$13. 4ab^3\sqrt{9a^9b^{12}}$$

$$\begin{aligned} 4ab^3 \sqrt{9a^8b^{12}} \sqrt{a} \\ 4ab^3(3a^4b^6) \sqrt{a} \\ 12a^5b^9 \sqrt{a} \end{aligned}$$

$$15. 2p^2q\sqrt{147p^9q^{12}}$$

$$\begin{aligned} 2p^2q \sqrt{49p^8q^{12}} \sqrt{3p} \\ 2p^2q(7p^4q^6) \sqrt{3p} \\ 14p^6q^7 \sqrt{3p} \end{aligned}$$

$$10. 5y\sqrt{100x^8y^7}$$

$$\begin{aligned} 5y \sqrt{100x^6y^6} \sqrt{y} \\ 5y(10x^3y^3) \sqrt{y} \\ 50x^3y^4 \sqrt{y} \end{aligned}$$

$$12. 6y^2\sqrt{28xy^5}$$

$$\begin{aligned} 6y^2 \sqrt{4y^4} \sqrt{7xy} \\ 6y^2(2y^2) \sqrt{7xy} \\ 12y^4 \sqrt{7xy} \end{aligned}$$

$$14. 8m^2n\sqrt{125m^8n^6}$$

$$\begin{aligned} 8m^2n \sqrt{25m^8n^6} \sqrt{5} \\ 8m^2n(5m^4n^3) \sqrt{5} \\ 40m^6n^4 \sqrt{5} \end{aligned}$$

$$16. 3xy\sqrt{192x^9y^{13}}$$

$$\begin{aligned} 3xy \sqrt{64x^8y^{12}} \sqrt{3xy} \\ 3xy(8x^4y^6) \sqrt{3xy} \\ 24x^5y^7 \sqrt{3xy} \end{aligned}$$