

Name: Key
Algebra 1

Date: _____
Band: _____

Unit 9: Radical Expressions PBA Practice

Simplify.

1. $\sqrt{98}$
 $\sqrt{49} \sqrt{2}$
 $7\sqrt{2}$

2. $\sqrt{16b^5}$
 $\sqrt{16} \sqrt{b^5}$
 $4 \sqrt{b^4} \sqrt{b}$
 $4b^2 \sqrt{b}$

3. $\frac{\sqrt{5}}{\sqrt{3}} \cdot \frac{\sqrt{3}}{\sqrt{3}} = \frac{\sqrt{15}}{3}$

4. $\sqrt{128}$
 $\sqrt{64} \sqrt{2}$
 $8\sqrt{2}$

5. $\sqrt{50t^5}$
 $\sqrt{50} \sqrt{t^5}$
 $\sqrt{25} \sqrt{2} \sqrt{t^4} \sqrt{t}$
 $5\sqrt{2} \cdot t^2 \sqrt{t}$
 $5t^2 \sqrt{2t}$

6. $\frac{22}{\sqrt{11}} \cdot \frac{\sqrt{11}}{\sqrt{11}} = \frac{22\sqrt{11}}{11} = 2\sqrt{11}$

7. $-2\sqrt{7x^2} \cdot \frac{1}{3}\sqrt{28x^3}$
 $-\frac{2}{3} \sqrt{196x^5}$
 $-\frac{2}{3} \sqrt{196} \sqrt{x^5}$
 $-\frac{2}{3} \cdot 14 \sqrt{x^4} \sqrt{x}$
 $-\frac{28}{3} x^2 \sqrt{x}$

8. $6\sqrt{5t^3} \cdot \sqrt{15t^5}$
 $6\sqrt{75t^8}$
 $6\sqrt{75} \sqrt{t^8}$
 $6\sqrt{25} \sqrt{3} \cdot t^4$
 $6 \cdot 5 \sqrt{3} \cdot t^4$
 $30t^4 \sqrt{3}$

9. $\sqrt{2y} \cdot \sqrt{128y^5}$
 $\sqrt{256y^6}$
 $\sqrt{256} \sqrt{y^6}$
 $16y^3$

10. $3\sqrt{7} - \sqrt{63}$

$3\sqrt{7} - \sqrt{9\sqrt{7}}$

$3\sqrt{7} - 3\sqrt{7}$

$\boxed{0}$

11. $4\sqrt{128} + 5\sqrt{18}$

$4\sqrt{64\sqrt{2}} + 5\sqrt{9\sqrt{2}}$

$4 \cdot 8\sqrt{2} + 5 \cdot 3\sqrt{2}$

$32\sqrt{2} + 15\sqrt{2}$

$\boxed{47\sqrt{2}}$

12. $3\sqrt{45} - 8\sqrt{20}$

$3\sqrt{9\sqrt{5}} - 8\sqrt{4\sqrt{5}}$

$3 \cdot 3\sqrt{5} - 8 \cdot 2\sqrt{5}$

$9\sqrt{5} - 16\sqrt{5}$

$\boxed{-7\sqrt{5}}$

13. $\sqrt{28} - 5\sqrt{7}$

$\sqrt{4\sqrt{7}} - 5\sqrt{7}$

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

$\boxed{-3\sqrt{7}}$

14. $-6\sqrt{10} + 5\sqrt{90}$

$-6\sqrt{10} + 5\sqrt{9\sqrt{10}}$

$-6\sqrt{10} + 5 \cdot 3\sqrt{10}$

$-6\sqrt{10} + 15\sqrt{10}$

$\boxed{9\sqrt{10}}$

15. $3\sqrt{3} - 2\sqrt{12}$

$3\sqrt{3} - 2\sqrt{4\sqrt{3}}$

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

$3\sqrt{3} - 4\sqrt{3}$

$\boxed{-1\sqrt{3}}$

16. $5\sqrt{8} + 2\sqrt{72}$

$5\sqrt{4\sqrt{2}} + 2\sqrt{36\sqrt{2}}$

$5 \cdot 2\sqrt{2} + 2 \cdot 6\sqrt{2}$

$10\sqrt{2} + 12\sqrt{2}$

$\boxed{22\sqrt{2}}$

17. $\sqrt{12} + 4\sqrt{75} - \sqrt{36}$

$\sqrt{4\sqrt{3}} + 4\sqrt{25\sqrt{3}} - 6$

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

$2\sqrt{3} + 20\sqrt{3} - 6$

$\boxed{22\sqrt{3} - 6}$

18. $2\sqrt{18} - \sqrt{32} + 4\sqrt{8}$

$2\sqrt{9\sqrt{2}} - \sqrt{16\sqrt{2}} + 4\sqrt{4\sqrt{2}}$

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

$6\sqrt{2} - 4\sqrt{2} + 8\sqrt{2}$

$\boxed{10\sqrt{2}}$