

Unit 9. Day 5. Homework
 ADDING & SUBTRACTING RADICALS (WITH SOME SIMPLIFYING, TOO)

(#1-10) Perform the given operation and simplify.

1. $\sqrt{5} - 6\sqrt{5}$

$-5\sqrt{5}$

2. $9\sqrt{32} + \sqrt{2}$

$9\sqrt{16 \cdot 2} + \sqrt{2}$
 $9 \cdot 4\sqrt{2} + \sqrt{2}$
 $36\sqrt{2} + \sqrt{2}$
 $37\sqrt{2}$

3. $\sqrt{12} + 6\sqrt{3} + 2\sqrt{6}$

$\sqrt{4 \cdot 3} + 6\sqrt{3} + 2\sqrt{6}$
 $2\sqrt{3} + 6\sqrt{3} + 2\sqrt{6}$
 $8\sqrt{3} + 2\sqrt{6}$

4. $3\sqrt{6} + 2\sqrt{24} - 1$

$3\sqrt{6} + 2\sqrt{4 \cdot 6} - 1$
 $3\sqrt{6} + 2 \cdot 2\sqrt{6} - 1$
 $3\sqrt{6} + 4\sqrt{6} - 1$
 $7\sqrt{6} - 1$

5. $3\sqrt{2} - \sqrt{24} + 2\sqrt{98}$

$3\sqrt{2} - \sqrt{4 \cdot 6} + 2\sqrt{49 \cdot 2}$
 $3\sqrt{2} - 2\sqrt{6} + 2 \cdot 7\sqrt{2}$
 $3\sqrt{2} - 2\sqrt{6} + 14\sqrt{2}$
 $17\sqrt{2} - 2\sqrt{6}$

6. $3\sqrt{112} - 5\sqrt{14} + 3\sqrt{28}$

$3\sqrt{16 \cdot 7} - 5\sqrt{14} + 3\sqrt{4 \cdot 7}$
 $3 \cdot 4\sqrt{7} - 5\sqrt{14} + 3 \cdot 2\sqrt{7}$
 $12\sqrt{7} - 5\sqrt{14} + 6\sqrt{7}$
 $18\sqrt{7} - 5\sqrt{14}$

DON'T FORGET THE OLD STUFF!

(#11-16) Simplify. Leave no radicals in the denominator.

7. $x\sqrt{320x^5}$

$x\sqrt{64 \cdot 5 \cdot x^4 \cdot x}$
 $x \cdot 8 \cdot x^2 \sqrt{5x}$
 $8x^3\sqrt{5x}$

8. $2b^2\sqrt{425a^2b^9}$

$2b^2\sqrt{25 \cdot 17 \cdot a^2 \cdot b^8 \cdot b}$
 $2b^2 \cdot 5 \cdot a \cdot b^4 \sqrt{17b}$
 $10ab^6\sqrt{17b}$

9. $5\sqrt{6} \cdot 3\sqrt{28}$

$5\sqrt{6} \cdot 3\sqrt{4 \cdot 7}$
 $5\sqrt{6} \cdot 3 \cdot 2\sqrt{7}$
 $5\sqrt{6} \cdot 6\sqrt{7}$
 $30\sqrt{42}$

10. $2x^5\sqrt{3x^7} \cdot 5\sqrt{32x}$

$2x^5\sqrt{3x^6 \cdot x} \cdot 5\sqrt{16 \cdot 2 \cdot x}$
 $2x^5 \cdot x^3 \sqrt{3x} \cdot 5 \cdot 4\sqrt{2x}$
 $2x^8 \sqrt{3x} \cdot 20\sqrt{2x}$
 $40x^8 \sqrt{6x^2} = 40x^9\sqrt{6}$