14.1 – ADDING & SUBTRACTING RADICALS

1. $4\sqrt{7} + 5\sqrt{7} =$ $9\sqrt{7}$

2. $8\sqrt{11} - 2\sqrt{11} =$ $6\sqrt{11}$

3. $3\sqrt{6} - 2\sqrt{13} + 5\sqrt{6} =$ $8\sqrt{6} - 2\sqrt{13}$

4. $7\sqrt{3} + 2\sqrt{2} - 3\sqrt{2} - \sqrt{3} =$ $6\sqrt{3} - \sqrt{2}$

5. $5\sqrt{192} - 7\sqrt{3} =$ $33\sqrt{3}$

$40\sqrt{3} - 7\sqrt{3} =$

Simplify $5\sqrt{192}$:

2 | 192
2 | 96
2 | 48
2 | 24
2 | 12
2 | 6
3

$8 \cdot 5\sqrt{3} =$
$40\sqrt{3}$

6. $25\sqrt{2} + 2\sqrt{27} - 3\sqrt{98} =$ $4\sqrt{2} + 6\sqrt{3}$

$25\sqrt{2} + 6\sqrt{3} - 21\sqrt{2} =$

Simplify $2\sqrt{27}$:

3 | 27
3 | 9
3

$2 \cdot 3\sqrt{3} =$
$6\sqrt{3}$

Simplify $3\sqrt{98}$:

2 | 98
7 | 49
7

$3 \cdot 7\sqrt{2} =$
$21\sqrt{2}$

7. $7\sqrt{3} - 4\sqrt{6} + 2\sqrt{48} - 6\sqrt{54} =$ $15\sqrt{3} - 22\sqrt{6}$

$7\sqrt{3} - 4\sqrt{6} + 8\sqrt{3} - 18\sqrt{6}$

Simplify $2\sqrt{48}$:

2 | 48
2 | 24
2 | 12
2 | 6
3

$2 \cdot 4\sqrt{3} =$
$8\sqrt{3}$

Simplify $6\sqrt{54}$:

2 | 54
3 | 27
3 | 9
3

$6 \cdot 3\sqrt{6} =$
$18\sqrt{6}$

* Radicals work like variables! To add and subtract, there must be like terms. Like terms have the same number under the radical.