

**A.N.3: Operations with Radicals 4: Perform addition, subtraction, multiplication, and division**

- 1 The expression  $\sqrt{90} \cdot \sqrt{40} - \sqrt{8} \cdot \sqrt{18}$  simplifies to

1) 22.9  
2) 48  
3) 864  
4) 3,456

- 2 Express the product of  $3\sqrt{20}(2\sqrt{5} - 7)$  in simplest radical form.

- 3 Perform the indicated operations and express the answer in simplest radical form.

$$3\sqrt{7}(\sqrt{14} + 4\sqrt{56})$$

- 4 If  $(\sqrt{128} - \sqrt{72})$  is divided by  $\sqrt{8}$ , the result is

1) 1  
2)  $8\sqrt{2} - 3$   
3)  $\sqrt{7}$   
4)  $4 - 6\sqrt{2}$

- 5 Simplify:  $\frac{\sqrt{27} + \sqrt{75}}{\sqrt{12}}$

- 6 Simplify:  $\frac{\sqrt{75} + \sqrt{48}}{\sqrt{27}}$

- 7 Express  $\frac{16\sqrt{21}}{2\sqrt{7}} - 5\sqrt{12}$  in simplest radical form.

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#### Answer Section

1 ANS: 2

$$\sqrt{90} \cdot \sqrt{40} - \sqrt{8} \cdot \sqrt{18} = \sqrt{3600} - \sqrt{144} = 60 - 12 = 48$$

PTS: 2

REF: 060218a

2 ANS:

$$60 - 42\sqrt{5} \cdot 3\sqrt{20}(2\sqrt{5} - 7) = 6\sqrt{100} - 21\sqrt{20} = 60 - 21\sqrt{4}\sqrt{5} = 60 - 42\sqrt{5}$$

PTS: 3

REF: 080834ia

3 ANS:

$$3\sqrt{7}(\sqrt{7}\sqrt{2} + 4\sqrt{7}\sqrt{4}\sqrt{2}) = 21\sqrt{2} + 168\sqrt{2} = 189\sqrt{2}$$

PTS: 3

REF: 061436ia

4 ANS: 1

PTS: 2

REF: 068922siii

5 ANS:

4

PTS: 2

REF: 089603al

6 ANS:

3

PTS: 2

REF: 089710al

7 ANS:

$$-2\sqrt{3} \frac{16\sqrt{21}}{2\sqrt{7}} - 5\sqrt{12} = 8\sqrt{3} - 5\sqrt{4}\sqrt{3} = 8\sqrt{3} - 10\sqrt{3} = -2\sqrt{3}$$

PTS: 3

REF: 081136ia