MA90 Exercises for section 8.5   Multiplication and Division of Radicals

Short Answer

1. Perform the multiplication. Give your answer in simplified form for radical expressions.

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

    .

2. Perform the multiplication. Give your answer in simplified form for radical expressions.

    $\sqrt{15}\ \sqrt{5}$

    .

3. Perform the multiplication. Give your answer in simplified form for radical expressions.

    $\left(5\sqrt{3}\right)\left(2\sqrt{7}\right)$

    .

4. Perform the multiplication. Give your answer in simplified form for radical expressions.

    $\sqrt{11}\left(4\sqrt{7} - \sqrt{11}\right)$

    .

5. Perform the multiplication. Give your answer in simplified form for radical expressions.

    $\left(\sqrt{y} + 1\right)^2$

    .

6. Perform the multiplication. Give your answer in simplified form for radical expressions.

    $\left(5 + \sqrt{2}\right)^2$

7. Perform the multiplication. Give your answer in simplified form for radical expressions.

$$\left(\sqrt{7} + 3\right)\left(\sqrt{7} - 4\right)$$

.

8. Perform the multiplication. Give your answer in simplified form for radical expressions.

$$\left(\sqrt{x} + 1\right)\left(\sqrt{x} - 1\right)$$

.

9. Perform the multiplication. Give your answer in simplified form for radical expressions.

$$\left(\sqrt{a} + \frac{2}{3}\right)\left(\sqrt{a} + \frac{1}{3}\right)$$

.

10. Perform the multiplication. Give your answer in simplified form for radical expressions.

$$\left(7\sqrt{a} + 5\sqrt{b}\right)\left(7\sqrt{a} - 5\sqrt{b}\right)$$

.

11. Rationalize the denominator. Give your answer in simplified form.

$$\frac{\sqrt{5}}{\sqrt{11} - \sqrt{3}}$$

.

12. Rationalize the denominator. Give your answer in simplified form.

$$\frac{\sqrt{x} + 5}{\sqrt{x} - 5}$$

.

13. Rationalize the denominator. Give your answer in simplified form.

$$\frac{\sqrt{5} - \sqrt{7}}{\sqrt{5} + \sqrt{3}}$$

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Answer Section

SHORT ANSWER

1. ANS:
    $\sqrt{6}$

    PTS: 1
2. ANS:
    $5\sqrt{3}$

    PTS: 1
3. ANS:
    $10\sqrt{21}$

    PTS: 1
4. ANS:
    $4\sqrt{77} - 11$

    PTS: 1
5. ANS:
    $y + 2\sqrt{y} + 1$

    PTS: 1
6. ANS:
    $27 + 10\sqrt{2}$

    PTS: 1
7. ANS:
    $-5 - \sqrt{7}$

    PTS: 1
8. ANS:
    $x - 1$

    PTS: 1
9. ANS:
    $a + \sqrt{a} + \dfrac{2}{9}$

    PTS: 1

10. ANS:
$49a - 25b$

PTS: 1

11. ANS:
$$\frac{\sqrt{55} + \sqrt{15}}{8}$$

PTS: 1

12. ANS:
$$\frac{x + 10\sqrt{x} + 25}{x - 25}$$

PTS: 1

13. ANS:
$$\frac{5 - \sqrt{15} - \sqrt{35} + \sqrt{21}}{2}$$

PTS: 1