



Math worksheet on 'Radicals - Multiplying Monomials with Binomials (Values and Variables) (Level 3)'. Part of a broader unit on 'Radicals - Multiplication Intro'

Learn online: [app.mobius.academy/math/units/radicals\\_multiplication\\_intro/](http://app.mobius.academy/math/units/radicals_multiplication_intro/)

**2** Multiply the radical expressions and simplify the answer

$$(b^2\sqrt{3x} - 4\sqrt{7}) \cdot x^2b\sqrt{3b}$$

- |                                                |                                                    |
|------------------------------------------------|----------------------------------------------------|
| <b>a</b> $3x^2b^3\sqrt{bx} - 4x^2b\sqrt{21b}$  | <b>b</b> $3x^2b^3\sqrt{bx} - 4b\sqrt{21b}$         |
| <b>c</b> $15x^2b^3\sqrt{bx} - 4x^2b\sqrt{21b}$ | <b>d</b> $3x^2b^3\sqrt{bx} - 4x^2b^2\sqrt{21}$     |
| <b>e</b> $3x^2b^3\sqrt{bx} - 4x^2b\sqrt{21}$   | <b>f</b> $3x^2b^3\sqrt{bx} - 4x^2b\sqrt{21b^{-1}}$ |

**4** Multiply the radical expressions and simplify the answer

$$(5y^2c^2\sqrt{7} - y\sqrt{2yc}) \cdot c^2\sqrt{11y}$$

- |                                                  |                                                 |
|--------------------------------------------------|-------------------------------------------------|
| <b>a</b> $5c^4y^2\sqrt{77y} - c^2y\sqrt{22c}$    | <b>b</b> $5c^4y^3\sqrt{77y} - c^2y^2\sqrt{22c}$ |
| <b>c</b> $5c^4y^2\sqrt{77y} - c^2y^2\sqrt{22yc}$ | <b>d</b> $5c^4y^2\sqrt{77y} - c^3y^2\sqrt{22}$  |
| <b>e</b> $5c^4y^2\sqrt{77y} - y^2\sqrt{22c}$     | <b>f</b> $5c^4y^2\sqrt{77y} - c^2y^2\sqrt{22c}$ |

**6** Multiply the radical expressions and simplify the answer

$$\sqrt{3} \cdot (2\sqrt{3z} - z\sqrt{11zy})$$

- |                                          |                                      |
|------------------------------------------|--------------------------------------|
| <b>a</b> $6\sqrt{z} - z\sqrt{33zy}$      | <b>b</b> $6z\sqrt{z} - z\sqrt{33zy}$ |
| <b>c</b> $6\sqrt{z} - z\sqrt{33z^{-1}y}$ | <b>d</b> $6\sqrt{z} - z\sqrt{33y}$   |
| <b>e</b> $3\sqrt{z} - z\sqrt{33zy}$      | <b>f</b> $6\sqrt{z} - z^2\sqrt{33y}$ |

**1** Multiply the radical expressions and simplify the answer

$$\sqrt{3d} \cdot (3\sqrt{2} + \sqrt{5md})$$

- |                                     |                                       |
|-------------------------------------|---------------------------------------|
| <b>a</b> $\sqrt{6d} + d\sqrt{15m}$  | <b>b</b> $3\sqrt{6d} + d^2\sqrt{15m}$ |
| <b>c</b> $3\sqrt{6d} + d\sqrt{15m}$ | <b>d</b> $3\sqrt{d} + d\sqrt{15m}$    |
| <b>e</b> $3\sqrt{6d} + 2d\sqrt{m}$  | <b>f</b> $3d\sqrt{6d} + d\sqrt{15m}$  |

**3** Multiply the radical expressions and simplify the answer

$$r\sqrt{3n} \cdot (\sqrt{11r} - 3\sqrt{3})$$

- |                                       |                                        |
|---------------------------------------|----------------------------------------|
| <b>a</b> $r^2\sqrt{33n} - 9r\sqrt{n}$ | <b>b</b> $r\sqrt{33nr} - 9r\sqrt{n}$   |
| <b>c</b> $rn\sqrt{33r} - 9r\sqrt{n}$  | <b>d</b> $r^2\sqrt{33nr} - 9r\sqrt{n}$ |
| <b>e</b> $r\sqrt{33nr} - 9rn$         | <b>f</b> $rn\sqrt{33nr} - 9r\sqrt{n}$  |

**5** Multiply the radical expressions and simplify the answer

$$(5p\sqrt{3p} + p\sqrt{11}) \cdot p\sqrt{13p}$$

- |                                           |                                                |
|-------------------------------------------|------------------------------------------------|
| <b>a</b> $5p^4\sqrt{39} + p^2\sqrt{143p}$ | <b>b</b> $5p^3\sqrt{39} + p^2\sqrt{143}$       |
| <b>c</b> $5p^3\sqrt{39} + p\sqrt{143p}$   | <b>d</b> $5p^3\sqrt{39} + p^2\sqrt{143p^{-1}}$ |
| <b>e</b> $5p^5\sqrt{39} + p^2\sqrt{143p}$ | <b>f</b> $5p^3\sqrt{39} + p^2\sqrt{143p}$      |

**7** Multiply the radical expressions and simplify the answer

$$n\sqrt{11zn} \cdot (4zn\sqrt{3n} + n\sqrt{7zn})$$

- |                                             |                                             |
|---------------------------------------------|---------------------------------------------|
| <b>a</b> $4n^2z\sqrt{33zn} + n^3z\sqrt{77}$ | <b>b</b> $4n^4z\sqrt{33z} + n^3z\sqrt{77}$  |
| <b>c</b> $4n^3z\sqrt{3z} + n^3z\sqrt{77}$   | <b>d</b> $4n^3z\sqrt{33z} + n^3z\sqrt{77}$  |
| <b>e</b> $4n^5z\sqrt{33z} + n^3z\sqrt{77}$  | <b>f</b> $4n^3z\sqrt{33z} + 3n^3z\sqrt{77}$ |