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Math worksheet on 'Radicals - Multiplying Monomials with Binomials (Values and Variables) (Level 4)'. Part of a broader unit on 'Radicals - Multiplication Intro'

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1 Multiply the radical expressions and simplify the answer

$$\left(5z\sqrt{2xz} - z\sqrt{11}\right) \cdot 5x\sqrt{2x}$$

a	$50x^2z\sqrt{z} - 5xz\sqrt{22x^{-1}}$	**b**	$50x^2z\sqrt{z} - 5xz\sqrt{22x}$
c	$50x^2z^{-1}\sqrt{z} - 5xz\sqrt{22x}$	**d**	$50x^3z\sqrt{z} - 5xz\sqrt{22x}$
e	$50x^2z\sqrt{z} - 5xz\sqrt{x}$	**f**	$50x^2z\sqrt{z} - 5x^2z\sqrt{22}$

2 Multiply the radical expressions and simplify the answer

$$\left(2m\sqrt[3]{3} - m\sqrt[3]{3}\right) \cdot 2pm\sqrt[3]{3p}$$

a	$2pm^2\sqrt[3]{9p}$	**b**	$4pm^2\sqrt[3]{9p} - 2pm^2\sqrt[3]{9p^2}$
c	$4pm^2\sqrt[3]{9p} - 2p^2m^2\sqrt[3]{9}$	**d**	$4pm^4\sqrt[3]{9p} - 2pm^2\sqrt[3]{9p}$
e	$4pm^2\sqrt[3]{9p} - 2pm^2\sqrt[3]{9}$	**f**	$4pm^2\sqrt[3]{9} - 2pm^2\sqrt[3]{9p}$

3
$$5m^2z\sqrt{2z} \cdot \left(mz\sqrt{11m} + 4mz^2\sqrt{2}\right)$$

Multiply the radical expressions and simplify the answer

a	b	c	d	e	f
$5m^3z^2\sqrt{22zm} + 40m^3z^3\sqrt{z}$	$5m^3z^2\sqrt{zm} + 40m^3z^3\sqrt{z}$	$5m^3z^2\sqrt{22zm} + 40m^3z^4$	$5m^3z^2\sqrt{22zm} + 40m^3z^3\sqrt{z^{-1}}$	$5m^3z^2\sqrt{2zm} + 40m^3z^3\sqrt{z}$	$5m^3z^2\sqrt{22zm} + 40m^3z^3$

4 Multiply the radical expressions and simplify the answer

$$2n\sqrt{2} \cdot \left(5b\sqrt{3b} - b^2\sqrt{2n}\right)$$

a	$10nb^3\sqrt{6b} - 4nb^2\sqrt{n}$	**b**	$10nb\sqrt{6b} - 2nb^2\sqrt{2n}$
c	$10nb\sqrt{6b} - 4n^2b^2$	**d**	$10nb\sqrt{6b} - 4nb^2\sqrt{n}$
e	$10nb\sqrt{6b} - 4nb^2$	**f**	$10nb^2\sqrt{6b} - 4nb^2\sqrt{n}$

5 Multiply the radical expressions and simplify the answer

$$5z^2\sqrt{11} \cdot \left(\sqrt{13} + 2\sqrt{3z}\right)$$

a	$5z^2 + 10z^2\sqrt{33z}$	**b**	$5z^2\sqrt{143} + 10z\sqrt{33z}$
c	$5z^2\sqrt{143} + 10z^2\sqrt{33z}$	**d**	$5z^2\sqrt{143} + 10z^3\sqrt{33}$
e	$5z^4\sqrt{143} + 10z^2\sqrt{33z}$	**f**	$5z^2\sqrt{143} + 10\sqrt{33z}$

6 Multiply the radical expressions and simplify the answer

$$2\sqrt[3]{2xd} \cdot \left(x\sqrt[3]{7d} + 3\sqrt[3]{11x^2}\right)$$

a	$2x\sqrt[3]{14xd^2} + x\sqrt[3]{22d}$	**b**	$3x\sqrt[3]{14xd^2} + 6x\sqrt[3]{22d}$
c	$2x^3\sqrt[3]{14xd^2} + 6x\sqrt[3]{22d}$	**d**	$2x\sqrt[3]{14xd^2} + 6x\sqrt[3]{22d}$
e	$2x\sqrt[3]{xd^2} + 6x\sqrt[3]{22d}$	**f**	$2x^2\sqrt[3]{14d^2} + 6x\sqrt[3]{22d}$

7 Multiply the radical expressions and simplify the answer

$$2c\sqrt[3]{3cn} \cdot \left(cn\sqrt[3]{5cn} + 3c\sqrt[3]{7}\right)$$

a	$2c^2n\sqrt[3]{15c^2n^2} + 6c^3\sqrt[3]{21cn}$	**b**	$2c^3n\sqrt[3]{15cn^2} + 6c^2\sqrt[3]{21cn}$
c	$c^2n\sqrt[3]{15c^2n^2} + 6c^2\sqrt[3]{21cn}$	**d**	$2c^2n\sqrt[3]{15c^2n^2} + 6c\sqrt[3]{21cn}$
e	$2c^2n\sqrt[3]{15c^2n^2} + 6c^2\sqrt[3]{3cn}$	**f**	$2c^2n\sqrt[3]{15c^2n^2} + 6c^2\sqrt[3]{21cn}$