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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

$$2y\sqrt[3]{11yx^2} \cdot \left(\sqrt[3]{13yx^2} + 2x\sqrt[3]{5y^2}\right)$$

Multiply the radical expressions and simplify the answer

a	b	c	d	e	f
$2yx\sqrt[3]{143y^2x} + 4y^2x\sqrt[3]{55yx^2}$	$2y^3x\sqrt[3]{143y^2x} + 4y^2x\sqrt[3]{55x^2}$	$yx\sqrt[3]{143y^2x} + 4y^2x\sqrt[3]{55x^2}$	$2yx\sqrt[3]{143y^2x} + 4y^2x\sqrt[3]{55x^2}$	$2yx\sqrt[3]{143y^2x} + 4y^2x^{-1}\sqrt[3]{55x^2}$	$2x\sqrt[3]{143y^2x} + 4y^2x\sqrt[3]{55x^2}$

2

$$3mb\sqrt{7b} \cdot \left(2m^2b\sqrt{13} + m^2b^2\sqrt{5}\right)$$

Multiply the radical expressions and simplify the answer

a	b	c	d	e	f
$6m^3b^2\sqrt{91b} + 3m^2b^3\sqrt{35b}$	$6m^5b^2\sqrt{91b} + 3m^3b^3\sqrt{35b}$	$6m^3b^3\sqrt{91} + 3m^3b^3\sqrt{35b}$	$4m^3b^2\sqrt{91b} + 3m^3b^3\sqrt{35b}$	$6m^3b^2\sqrt{91} + 3m^3b^3\sqrt{35b}$	$6m^3b^2\sqrt{91b} + 3m^3b^3\sqrt{35b}$

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3 Multiply the radical expressions and simplify the answer

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

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

4

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

Multiply the radical expressions and simplify the answer

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

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5 Multiply the radical expressions and simplify the answer

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

a $\quad 4\sqrt[3]{49d^2} + 2d\sqrt[3]{21d^2p}$	b $\quad 4\sqrt[3]{49d^2} + 3d\sqrt[3]{21p}$
c $\quad 4\sqrt[3]{49d^2} + 2d\sqrt[3]{21p}$	d $\quad 4\sqrt[3]{d^2} + 2d\sqrt[3]{21p}$
e $\quad 4\sqrt[3]{49d^2} + d\sqrt[3]{21p}$	f $\quad 4\sqrt[3]{49d^2} + 2d\sqrt[3]{p}$

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6 Multiply the radical expressions and simplify the answer

$$\left(py\sqrt{2} + 3y^2\sqrt{2}\right) \cdot 2py\sqrt{7py}$$

a $4p^2y^2\sqrt{14py} + 6py^3\sqrt{14py}$	b $2p^2y^2\sqrt{14py} + 6py^3\sqrt{14p}$
c $2p^2y^3\sqrt{14py} + 6py^3\sqrt{14py}$	d $2p^2y^2\sqrt{14py} + 6py^3\sqrt{14py}$
e $2p^2y^2\sqrt{14y} + 6py^3\sqrt{14py}$	f $2p^4y^2\sqrt{14py} + 6py^3\sqrt{14py}$

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7 Multiply the radical expressions and simplify the answer

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

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