Math 2 Name_____

Math 2 Unit 3.2 Example Multiply Radicals

Simplify.

1) $\sqrt{5} \cdot \sqrt{3}$

2) $\sqrt[3]{-4} \cdot \sqrt[3]{32}$

3) $3\sqrt{10} \cdot -3\sqrt{6}$

4) $-4\sqrt[3]{3} \cdot 4\sqrt[3]{4}$

5) $4\sqrt{15}\left(5\sqrt{3} + 2\sqrt{2}\right)$

6) $2\sqrt{2}\left(3 + 3\sqrt{5}\right)$

7) $2\sqrt{6n}\left(3\sqrt{10n} + 3\sqrt{2n}\right)$

8) $-3\sqrt{15}\left(-5\sqrt{3} - 2\sqrt{5m}\right)$

9) $-3\sqrt{3}\left(2\sqrt{6x} + 3x\right)$

10) $-3\sqrt{6}\left(2 - 2\sqrt{3}\right)$

11) $-\sqrt{5}\left(3 + 5\sqrt{3n}\right)$

12) $3\sqrt{6r}\left(-2\sqrt{2r} - 2\sqrt{3}\right)$

13) $2\sqrt{10n}\left(-5\sqrt{6}-4\sqrt{2n}\right)$

14) $-3\sqrt{10}\left(-3\sqrt{2n}+4\right)$

15) $\left(-3\sqrt{5}-2\sqrt{3}\right)\left(5\sqrt{4}+4\sqrt{3}\right)$

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

17) $\left(-3\sqrt{3}-5\sqrt{2}\right)\left(-4\sqrt{3v}+3\sqrt{5}\right)$

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

19) $\left(-4-2\sqrt{2}\right)\left(-1-\sqrt{2a}\right)$

20) $\left(3-5\sqrt{3x}\right)\left(3+3\sqrt{3x}\right)$

21) $\left(2\sqrt{2v}-3\sqrt{5}\right)\left(3\sqrt{5v}-2\sqrt{5v}\right)$

22) $\left(-\sqrt{5}-3\sqrt{2}\right)\left(5\sqrt{5}+4\sqrt{2}\right)$

23) $\left(-4-5\sqrt{3}\right)\left(-2+5\sqrt{3}\right)$

24) $\left(2-\sqrt{3}\right)\left(3-3\sqrt{3}\right)$

Math 2 Name_____

Math 2 Unit 3.2 Example Multiply Radicals

Simplify.

1) $\sqrt{5} \cdot \sqrt{3}$

$\sqrt{15}$

2) $\sqrt[3]{-4} \cdot \sqrt[3]{32}$

$-4\sqrt[3]{2}$

3) $3\sqrt{10} \cdot -3\sqrt{6}$

$-18\sqrt{15}$

4) $-4\sqrt[3]{3} \cdot 4\sqrt[3]{4}$

$-16\sqrt[3]{12}$

5) $4\sqrt{15}(5\sqrt{3} + 2\sqrt{2})$

$60\sqrt{5} + 8\sqrt{30}$

6) $2\sqrt{2}(3 + 3\sqrt{5})$

$6\sqrt{2} + 6\sqrt{10}$

7) $2\sqrt{6n}(3\sqrt{10n} + 3\sqrt{2n})$

$12n\sqrt{15} + 12n\sqrt{3}$

8) $-3\sqrt{15}(-5\sqrt{3} - 2\sqrt{5m})$

$45\sqrt{5} + 30\sqrt{3m}$

9) $-3\sqrt{3}(2\sqrt{6x} + 3x)$

$-18\sqrt{2x} - 9x\sqrt{3}$

10) $-3\sqrt{6}(2 - 2\sqrt{3})$

$-6\sqrt{6} + 18\sqrt{2}$

11) $-\sqrt{5}(3 + 5\sqrt{3n})$

$-3\sqrt{5} - 5\sqrt{15n}$

12) $3\sqrt{6r}(-2\sqrt{2r} - 2\sqrt{3})$

$-12r\sqrt{3} - 18\sqrt{2r}$

13) $2\sqrt{10n}\left(-5\sqrt{6}-4\sqrt{2n}\right)$

$-20\sqrt{15n}-16n\sqrt{5}$

14) $-3\sqrt{10}\left(-3\sqrt{2n}+4\right)$

$18\sqrt{5n}-12\sqrt{10}$

15) $\left(-3\sqrt{5}-2\sqrt{3}\right)\left(5\sqrt{4}+4\sqrt{3}\right)$

$-30\sqrt{5}-12\sqrt{15}-20\sqrt{3}-24$

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

$15-20\sqrt{2}$

17) $\left(-3\sqrt{3}-5\sqrt{2}\right)\left(-4\sqrt{3v}+3\sqrt{5}\right)$

$36\sqrt{v}-9\sqrt{15}+20\sqrt{6v}-15\sqrt{10}$

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

$12\sqrt{a}-2\sqrt{2}+3\sqrt{2a}-1$

19) $\left(-4-2\sqrt{2}\right)\left(-1-\sqrt{2a}\right)$

$4+4\sqrt{2a}+2\sqrt{2}+4\sqrt{a}$

20) $\left(3-5\sqrt{3x}\right)\left(3+3\sqrt{3x}\right)$

$9-6\sqrt{3x}-45x$

21) $\left(2\sqrt{2v}-3\sqrt{5}\right)\left(3\sqrt{5v}-2\sqrt{5v}\right)$

$2v\sqrt{10}-15\sqrt{v}$

22) $\left(-\sqrt{5}-3\sqrt{2}\right)\left(5\sqrt{5}+4\sqrt{2}\right)$

$-49-19\sqrt{10}$

23) $\left(-4-5\sqrt{3}\right)\left(-2+5\sqrt{3}\right)$

$-67-10\sqrt{3}$

24) $\left(2-\sqrt{3}\right)\left(3-3\sqrt{3}\right)$

$15-9\sqrt{3}$