

NAME _____

O OR X WILD (JS ONLY)

PRINCIPLE

0 or x wild variation: The **0** or **x** cube may represent any numeral or operation on the cubes, but it must represent the same numeral or operation everywhere it occurs (**Goal and Solution**). Each **Solution-writer** must specify in writing the interpretation of the **0** or **x** cube if it stands for anything other than itself in his **Solution**. The player selecting this variation specifies whether **0** or **x** (but not both) is wild for the shake.

For examples of 0 wild, see worksheets **7H**, **7I**, and **7J**.

EXAMPLES

1. A Goal of **6x** may be interpreted as 60, 61, 62, ..., 69. There is no way the x may be interpreted as an operation sign.
2. The Goal **4x3** may be 4×3 , $4 + 3$, $4 - 3$, $4 \div 3$, or $4 \sqrt{3}$. The x may be a digit only if the exponent variation is chosen, and the 3 is the selected color.
3. Suppose the Goal is **7x2x3**. Since both x's must represent the same symbol, this Goal may be $7+2+3$, $7-2-3$, $7 \div 2 \div 3$, $7 \times 2 \times 3$, $7^* 2^* 3$, or $7 \sqrt{2} \sqrt{3}$. x may not be a digit.

X WILD IN COMBINATION WITH OTHER VARIATIONS

1. Sideways: There is no way to tell if an x cube in the Goal is sideways. The Goal **x \div 3** may be $(1/2) \div 3$ (or $2 \div 3$), $(1/3) \div 3$, ..., $(1/9) \div 3$. However, in **x7** the x may not be sideways.
2. Upside-down: Comments similar to those for sideways cube apply here. **x \div 3** could be $+1 \div 3$, $+2 \div 3$, ..., $+9 \div 3$.
3. Powers of the base: x, as 1, may be any power of the base.
4. Multiple operations: x may be used multiple times in a Solution only if it represents an *operation*, not if it represents a digit.
5. Exponent: x's are on the blue and green cubes. If blue or green exponent is called, an x may be used as an exponent without *.
6. Average: If x is used as +, it means average, not addition.
7. AB+: The Goal may be of the form **ABx**, with x representing +.
8. Base m: If x is used as a digit, it may be only 0, 1, 2, ..., $m-1$. So in base eleven or twelve, x may represent 0, 1, 2, ..., 9, * (ten), or in base twelve $\sqrt{\quad}$ (eleven).

EXERCISES

■ *With x wild, write all values of each Goal. Use ... to indicate patterns.*

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|------------------------------------|-----------------------------|
| 1. x^3 _____ | 2. $8x^2$ _____ |
| 3. xx _____ | 4. $1x6x2$ _____ |
| 5. $x+5$ _____ | 6. 4^*x _____ |
| 7. (base 8) $7 \div x$ _____ | 8. (AB+) $36xx5$ _____ |
| 9. (red exp.) $4x^2$ (red 2) _____ | 10. (average) $25x40$ _____ |
| 11. (pob) $x+3$ _____ | |