

Name: _____ Date: _____ Per: _____

Factorials!

Factorials are multiplication problems written with exclamation points! Multiply all of the numbers from the one given down to one.

Example 1) "Four factorial" is 4!

$$4! =$$

1. Complete the following table of factorials. You can check your work by comparing your answers to the few that are given.

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|------------------------------------|
| $0! = 1$ (by definition) |
| $1! = 1$ |
| $2! = 2 \cdot 1 = 2$ |
| $3! = 3 \cdot 2 \cdot 1 =$ |
| $4! = 4 \cdot 3 \cdot 2 \cdot 1 =$ |
| $5! = 120$ |
| $6! =$ |

| |
|-----------------------|
| $7! =$ |
| $8! =$ |
| $9! = 362,880$ |
| $10! =$ |
| $11! = 39,916,800$ |
| $12! = 479,001,600$ |
| $13! = 6,227,020,800$ |

Space for working out factorials:

Simplifying with Factorials - Be sure to use the order of operations (PEMDAS)

Example 2) $5! - 3! =$

Example 3) $\frac{(5 + 7)!}{10! 2!} =$

$$2. (9 - 4)! =$$

$$3. 3! 4! =$$

$$4. \frac{10!}{7!} =$$

$$5. \frac{12!}{8! 6!} =$$

$$6. \frac{10!}{6! 2! 2!} =$$

$$7. \frac{5!}{(9 - 4)!} =$$

$$8. \frac{10!}{(10 - 10)!} =$$

$$9. \frac{10!}{(10 - 4)!} =$$

$$10. \frac{4!}{(4 - 4)!} =$$

$$11. \frac{11!}{3!2!2!2!} =$$

$$12. \frac{8!}{(8 - 2)!} =$$

$$13. \frac{12!}{(12 - 4)!} =$$