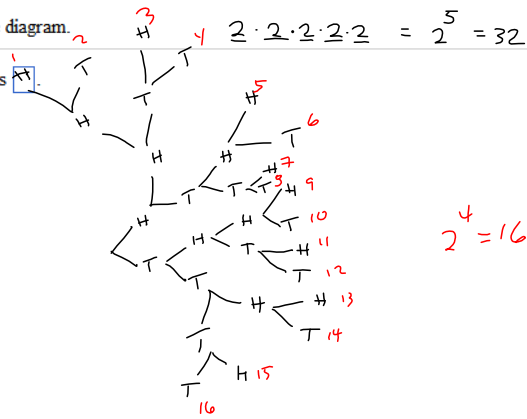**Ex. Score:** 8.4.3   **HW Score:** 0% (0 of 13 pts)

A coin is tossed and either heads (H) or tails (T) is recorded. If the coin is tossed five times, then how many outcomes are possible?

Click the icon to view the tree diagram.

$$2 \cdot 2 \cdot 2 \cdot 2 \cdot 2 = 2^5 = 32$$

The number of outcomes possible is ☐.
(Simplify your answer.)

$$2^4 = 16$$
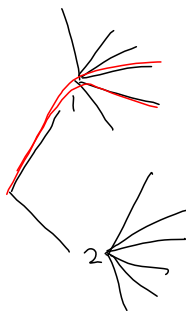
Apr 26-7:10 AM

Ex. Score: 0 of 1 p 8.4.7   **HW Score:** 0% (0 of 13 pts)   **0 of 13 complete**

A sales representative can take one of 2 different routes from City A to City D and any one of 6 different routes from City D to City M. How many different routes can she take from City A to City M, going through City D?

There are ☐ possible routes.

Multiplication Principle.

$$2 \cdot 6 = 12 \text{ choices}$$

Apr 26-7:18 AM

Ex. Score: 0 of 1 pt 8.4.15 H'

Evaluate.

$$\frac{8!}{5!} = \frac{8 \cdot 7 \cdot 6 \cdot \cancel{5} \cdot \cancel{4} \cdot \cancel{3} \cdot \cancel{2} \cdot \cancel{1}}{\cancel{5} \cdot \cancel{4} \cdot \cancel{3} \cdot \cancel{2} \cdot \cancel{1}} = 8 \cdot 7 \cdot 6 = \boxed{336}$$

$$
\begin{array}{r}
3\,56 \\
6 \\
\hline
3\,?6
\end{array}
$$

$\frac{8!}{5!} = \boxed{}$ (Simplify your answer.)

Apr 26-7:19 AM

Ex. Score: 0 of 1 pt 8.4.17

Evaluate the expression.

$$\frac{6!}{0!} = 6! = 6 \cdot 5 \cdot 4 \cdot 3 \cdot 2 = 720$$

$0! = 1$

$\frac{6!}{0!} = \boxed{}$
(Simplify your answer. Type an integer or a fraction.)

Apr 26-7:21 AM

2

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Ex. Score: 0 of 1 pt   8.4.19

Evaluate the expression.

$\dfrac{79!}{78!}$ = 79

$\dfrac{79!}{78!} = \boxed{}$

(Simplify your answer. Type an integer or a fraction.)

$79! = 79 \cdot 78 \cdots = 79 \cdot 78!$

$\dfrac{79!}{78!} = \dfrac{79 \cdot \cancel{78!}}{\cancel{78!}}$

Apr 26-7:22 AM

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Ex. Score: 0 of 1 pt   8.4.23

Evaluate the expression.

$P(6,2)$

$P(6,2) = \boxed{}$

$P(6,2) = \dfrac{6!}{(6-2)!} = \dfrac{6!}{4!} = 6 \cdot 5 = 30$

$P(5,2) = \dfrac{5!}{3!} = 5 \cdot 4 = 20$

$\{a, b, c, d, e\}$

ab, ba, ac, ca, ad, da, ae, ea, bc, cb, bd, db, be, eb,
1   2   3   4   5   6   7   8   9 10 11 12 13 14

cd, dc, ce, ec, de, ed
15 16 17 18 19 20

Apr 26-7:23 AM

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Ex. Score: 0 of 1 pt

8.4.33

Evaluate the expression.

P(44,0)

P(44,0) = ☐

Permutations on 44 things
taken 0 at a time

$$= P(44,0) = \frac{44!}{(44-0)!} = \frac{44!}{44!} = 1$$

Apr 26-7:23 AM

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Ex. Score: 0 of 1 pt   **HW Score:** 0% (0 of 13 pts)

8.4.37

A person has to perform 8 different tasks. How many different orders are there for the person to perform the 8 tasks?

The number of different ways to perform the tasks is ☐ .

$$P(8,8) = \frac{8!}{(8-8)!} = \frac{8!}{0!} = 8! = 8 \cdot 7 \cdot 6 \cdot 5 \cdot 4 \cdot 3 \cdot 2 \cdot 1$$

$$\underline{8} \cdot \underline{7} \cdot \underline{6} \cdot \underline{5} \cdot \underline{4} \cdot \underline{3} \cdot \underline{2} \cdot \underline{1}$$

$$\underline{8} \cdot \underline{7} \cdot \underline{6} \cdots$$

Apr 26-7:23 AM

<< < 1 2 3 4 5 6 7 8 9 10 > >>

Ex. Score: 0 of 1 pt   8.4.39   HW Score: 0% (0 of 13 pts)

A health inspector must visit 3 of 14 restaurants on Monday. In how many ways can she pick a first, second, and third restaurant to visit?

There are ☐ ways.

$14 \cdot 13 \cdot 12$

$P(14,3) = \dfrac{14!}{11!} = 14 \cdot 13 \cdot 12$

$= 2184$

Apr 26-7:24 AM

<< < 1 2 3 4 5 6 7 8 9 10 > >>   8.4.4

Ex. Score: 0 of 1 pt   8.4.41   HW Score: 0% (0 of 13 pts)   0 of 13 complete

The program director for a public radio station has 22 half-hour shows available for Sunday evening. How many different schedules are possible for the 6:00 to 10:00 pm time period?

For the time period 6:00 to 10:00 pm, approximately ☐ different schedules are possible.
(Use scientific notation. Use the multiplication symbol in the math palette as needed. Round to two decimal places as needed.)

$10 - 6 = 4 \ hrs = 8 \ \tfrac{1}{2}-hrs.$

$P(22,8) = \dfrac{22!}{(22-8)!} = \dfrac{22!}{14!} = 22 \cdot 21 \cdot 20 \cdot 19 \cdot 18 \cdot 17 \cdot 16 \cdot 15$

$\approx 1.28931264 \times 10^{10}$

$\_ \ \_ \ \_ \ \_ \ \_ \ \ \_ \ \_ \ \_$

Apr 26-7:25 AM

5

◄◄ ◄ (11) (12) (13) ► ►►

Ex. Score: 0 [8.4.43] **HW Score:** 0% (0 of 13 pt

A multiple-choice test consists of 8 questions with each question having 4 possible answers.

How many different ways are there to mark the answers?

☐ ways

$$4 \cdot 4 \cdot 4 \cdot 4 \cdot 4 \cdot 4 \cdot 4 \cdot 4 = 4^8 \boxed{65,536}$$

Apr 26-7:25 AM

◄◄ ◄ (11) (12) (13) ► ►►

Ex. Score: 0 of 1 p [8.4.47] **HW Score:** 0% (0 of 13 pts)

How many different 3-letter computer passwords are available if any letters can be used but repetition of letters is not allowed?

The number of different passwords is ☐.
(Simplify your answer.)

$$26 \cdot 25 \cdot 24 = 15600$$

$$P(26,3)$$

Apr 26-7:26 AM

<< < 11 12 13 ▷ >>

Ex. Score: 0 of 1 pt   8.4.55   **HW Score:** 0% (0 of 13 pts)

Ciara plans to list every possible 7-letter word from a group of 12 different letters. No letter may be repeated in her 7-letter words.

How many different possible words will be on her list?

□

$$P(12,7)$$

$$12 \cdot 11 \cdot 10 \cdot 9 \cdot 8 \cdot 7 \cdot 6 = 399,1680$$

Apr 26-7:26 AM