

14-1

Practice

Counting Outcomes

Draw a tree diagram to show the sample space for each event. Determine the number of possible outcomes.

- dining at an Italian, Mexican, or French restaurant, for lunch, early bird (early dinner special), or dinner, and with or without dessert

All work (including this tree diagram) must be on looseleaf.

If you only write an answer without showing how you got it you will get no credit.

EX) $4! = 4 \cdot 3 \cdot 2 \cdot 1 = 24$ ✓ good

EX) 24 ✗ no credit

If you add (on a separate full-size sheet) a hand drawn picture (drawn by you) of a real tree (maple, oak, etc.) and if it is large and shows some effort there will be a small bonus for it. -- Mr. C.

Find the value of each expression.

2. $5!$

3. $8!$

4. $10!$

5. $12!$

- How many different vacation plans are possible when choosing one each of 12 destinations, 3 lengths of stay, 5 travel options, and 4 types of accommodations?
- How many different ways can you arrange your work if you can choose from 7 weekly schedules, 6 daily schedules, and one of 3 types of duties?
- How many different ways can you treat a minor cut if you can choose from 3 methods of cleansing the cut, 5 antibiotic creams, 2 antibacterial sprays, and 6 types of bandages?
- TESTING** A teacher gives a quick quiz that has 4 true/false questions and 2 multiple choice questions, each of which has 5 answer choices. In how many ways can the quiz be answered if one answer is given for each question?

CLASS RINGS Students at Pacific High can choose class rings in one each of 8 styles, 5 metals, 2 finishes, 14 stones, 7 cuts of stone, 4 tops, 3 printing styles, and 30 inscriptions.

- How many different choices are there for a class ring?
- If a student narrows the choice to 2 styles, 3 metals, 4 cuts of stone, and 5 inscriptions (and has already made the remaining decisions), how many different choices for a ring remain?