C12 - 11.1 - FCP HW

How many outfits can a person make it two pairs of shoes, three pairs of pants, and five T-shirts?

How many outfits can a person make it five pairs of shoes, six pairs of pants, and 99 T-shirts?

How many meals can a person make from three vegetables, five meats, and seven desserts?

How many meals can a person make from eight vegetables, 2 meats, and 12 desserts?

How many four digit numbers are there?

How many four even numbers are there?

How many six digit numbers are there?

How many six odd numbers are there?

C12 - 11.2 - Factorials WS

Right as a repeated multiplication at Solve.

3! =

1! =

2! =

0! =

4! =

5! =

6! =

7! =

10! =

8! =

9! =

Solve using your calculator

14! =

32! =

54! =

17! =

Solve

3! 2! =

3! + 2! =

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

$\frac{5!}{3!}$ =

$\frac{100!}{97!}$

$\frac{9999!}{9998!}$ =

$\frac{5!}{3!\,2!}$ =

$\frac{3!}{5!\,2!}$ =

$\frac{(n+1)!}{n!}$ =

$\frac{(n+1)!}{(n-1)!}$ =

$\frac{(n+2)!}{(n-1)!}$ =

C12 - 11.3 - $(outcomes\ per\ trial)^{\#\ of\ trials}$ Notes

If you flip a coin five times what is the total number of outcomes? Draw a tree diagram to confirm.

If a test has 20 true and false questions how many answer keys are there possible?

If a test has A, B, C, D, E, and F multiple-choice answers with six questions how many answer keys are there possible?

If a family has 9 children what is the number of combinations of boys and girls?

If you have ten lights in your house how many combinations of on and off are there?

If a person has 5 phones and each can be on vibrate, ring or silent how many combinations are there?

If a survey has god, bad, and unsure, with 5 questions how many ways can someone fill out a survey?

C12 - 11.4 - @βC 123 nPr, n!, nCr Notes

Write all solutions, and solve using factorials, combinations, and permutations

How many ways can you arrange the letters DEF with no repeats?

How many ways can you arrange the letters DEF with no restrictions?

How many ways can you arrange the letters DEF two at a time with no repeats?

How many ways can you arrange the letters DEF two at a time with no restrictions?

How many ways you arrange the digits 123 with no repeats?

How many ways can arrange the digits 123 with no restrictions?

How many ways can you arrange the digits 123 two at a time with no repeats?

How many ways can you arrange the digits 123 two at a time with no restrictions?

C12 - 11.4 - Cases 123 WS

Don't forget to write all the combinations!

How many three digit numbers can we make from the numbers 0,1,2 with no restrictions? 1 case.

How many three digit numbers can we make from the numbers 0,1,2 with no repeats? 1 case.

How many three digit even numbers can we make from the numbers 0,1,2 with no repeats?

How many three digit numbers can we with no restrictions? 1 case.

How many three digit numbers can we make with no repeats? 1 case.

How many three digit even numbers can we make with no repeats?

How many four digit numbers greater than 5300 can we make from the numbers 1,2,5,6?

C12 - 11.4 - President vs. Committee WS

How many ways can you select a committee of three people from 11 people?

How many ways can you select a committee of three people from five boys and six girls?

How many ways can you select a president, secretary, and treasurer of three people from 11?

How many ways can you select a president, secretary, and treasurer of three people from five boys and six girls?

How many ways can you select a committee of three people with exactly 2 boys and a girl from five boys and six girls?

How many ways can you select a committee of three people with at least two girls, from five boys and six girls?

How many ways can you select a committee of three people with at least one girl, from five boys and six girls?

How many ways can select the committee of six people with at least one boy, from 12 boys and 13 girls?

How many ways can you select a committee of 10 people with at least one girl, from 12 boys and 13 girls?

C12 - 11.4 - nPr nCr n! WS

Solve. Use blanks and repeated multiplication with factorial notation and combination and permutation notation where necessary? Practice both algebra and your calculator.

How many ways can you select a captain from a team of nine players?

How many ways select a captain and a ball person from a team of nine players?

How many ways can you select three defenceman from a team of nine players?

How many ways can you select four mid-fielders from a team of nine players?

How many ways select a 9 person batting order from a team of 13?

How many ways can you select nine players for the field from a team of 13?

How many ways can seven people sit in a row?

How many ways can five people sit in a row?

How many ways can seven people be chosen from 10 to sit in a row?

How many ways can five people be chosen from eight to sit in a row?

C12 - 11.4 - Identical Objects nPr nCr n! WS **No repeats**

Solve. List if under ten combinations.

How many different words and we make from the letters NOSE?

How many different words can we make from the letters SOON?

How many different words can we make from the letters TOTO?

How many different words can we make from the letters DID?

How many different words and we make from the letters MISSISSIPPI?

How many different words make the letters STATISTICS?

How many words can we make from the letters ECONOMICS?

How many words and we make from the letters SUPERCALIFRAGILISTICEXPIALIDOCIOUS?

If you must walk 10 blocks east and 10 blocks south to get to school, if you may only travel east and south, how many different ways can you walk to school?

C12 - 11.4 - nPr nCr n! Restrictions WS

Solve. Use blanks and repeated multiplication with factorial notation and combination and permutation notation where necessary? Practice both algebra and your calculator.

How many ways can four boys and four girls sit in a row if?:

There are no restrictions:

All the girls must sit together, and all the boys must sit together?

Boys and girls must alternate:

The boys must be on the ends of the rows:

Matthew, a boy, must sit on the end:

Matthew, a boy, cannot sit on the end:

Note: No restrictions – Matthew must sit on the end!

Jacquelyn and Emily must sit together:

Jacquelyn and Emily cannot sit together:

How many ways can four boys and four girls sit in a circle if:

Remember: lock one person into a seat, and consider a row with one less person.

There are no restrictions:

All the girls must sit together, and all the boys must sit together?

Boys and girls must alternate:

The boys must be on the ends of the rows:

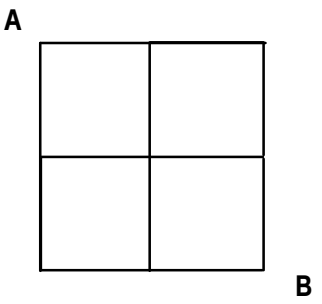
Jacquelyn and Emily must sit together:

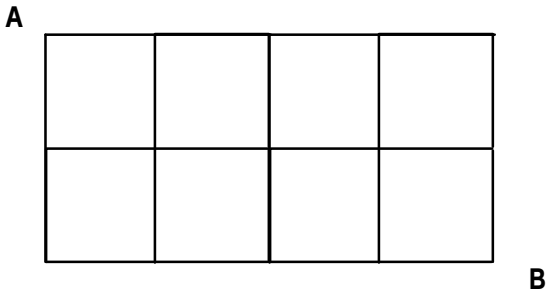
Jacquelyn and Emily cannot sit together:

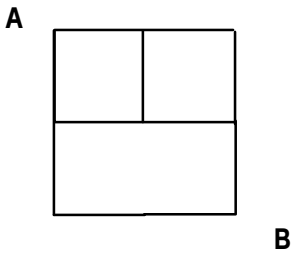
C12 - 11.4 - Paths in Squares HW

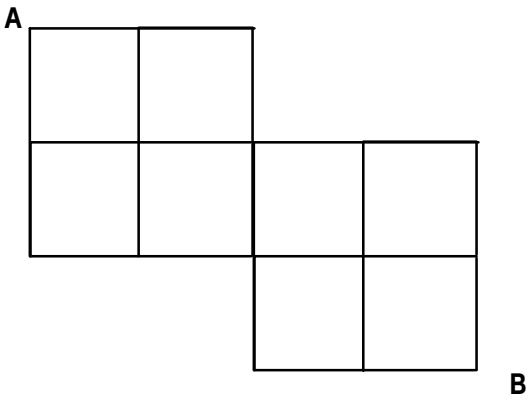
Pick a point, add points coming to it.

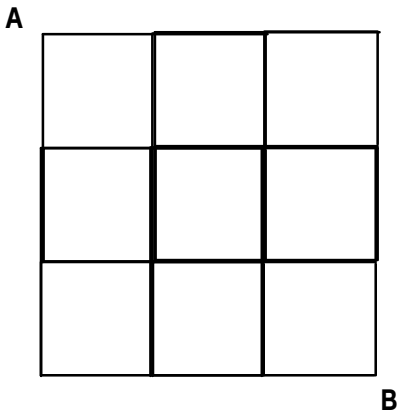
How many ways can you get from a to B if you may only travel east and south?

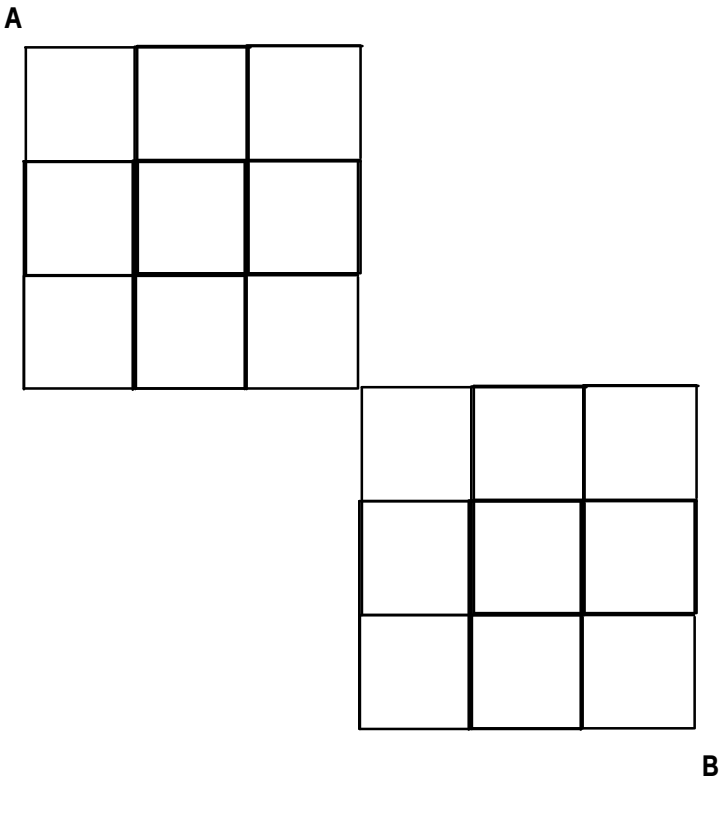


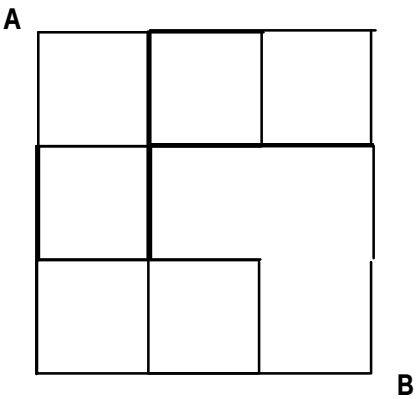












How many ways can you get from one corner of a four sided Rubik's cube to the opposite diagonal corner?

C12 - 11.4 - nPr nCr Algebra WS

Solve for the missing variable

$_nC_2$ = 6

$_nC_2$ = 21

$_nP_2$ = 42

$_nP_2$ = 20

$_nC_3$ = 10

$_nP_3$ = 120

$_3C_r$ = 3

C12 - 11.5 - Pascal's triangle HW

Draw the first seven rows of Pascal's triangle. Label the rows and columns with the appropriate "n" and "r" value. Replicate Pascal's triangle with the appropriate nCr notation.

C12 - 11.5 - Binomial Expansion HW

Expand the using FOIL.

$(x + 1)^2$

$(x + 1)^3$

$(x - 3)^2$

$(x - 3)^3$

$(a + b)^2$

$(a + b)^3$

What do you notice about the coefficients of the last two examples and Pascal's triangle?

Expand using Pascal's Triangle

$(x + y)^2$

$(x + y)^3$

$(x + y)^4$

$(x + y)^5$

C12 - 11.5 - Binomial Theorem WS

How many terms are in the expansion:

$(x + y)^2$ $(x + y)^4$ $(x + y)^{99}$

What is the third term of the expansion:

$(x + y)^5$ $(x + 2)^5$

What is the fifth term of the expansion:

$(x - 3)^7$ $(x - 2y)^8$

What is the 2nd term of the expansion:

$(x^2 + 2)^5$

What is the term with x^2 of the expansion:

$(x - 3)^7$

What is the constant term of the expansion:

$(x + 2)^3$