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## Evaluation 1

### About Evaluation

Every module in Fat Chance is followed by a set of **evaluation** problems. Remember, evaluation assignments are worth 80% of your final grade.

Unlike practice problems, which have unlimited attempts, evaluation problems allow for only **two attempts**. It is strongly recommended that you check your work thoroughly before submitting your answer.

NOTE: Evaluation problems do not include detailed explanations.

## Evaluation 1 Problem 1

1.0/1.0 point (graded)

How many whole numbers are there between **242** and **783**? *Choose the best answer.*

☐ 540

☐ 541

☒ 542 ✓

☐ 543

Submit

You have used 2 of 2 attempts

## Evaluation 1 Problem 2

1.0/1.0 point (graded)

How many numbers between **242** and **783** are divisible by **6**? *Choose the best answer.*

☒ 90 ✓

☐ 91

☐ 92

☐ 93

Submit

You have used 1 of 2 attempts

## Evaluation 1 Problem 3

1.0/1.0 point (graded)

How many numbers between **242** and **783** are NOT divisible by **6**? *Choose the best answer.*

☐ 449

☐ 450

☐ 451

☒ 452 ✓

Submit

You have used 1 of 2 attempts

## Evaluation 1 Problem 4

1.0/1.0 point (graded)

**13** athletes from around the world are competing in the steeplechase competition at the 2020 Olympics. By the outcome of the event we'll mean the determination of who gets the gold medal, who gets the silver medal, and who gets the bronze medal.

How many possible outcomes are there? *Choose the best answer.*

☐  $3 \times 2 \times 1$

☐  $13^3$

☒  $13 \times 12 \times 11$  ✓

☐  $3^{13}$

Submit

You have used 1 of 2 attempts

## Evaluation 1 Problem 5

1.0/1.0 point (graded)

**13** athletes from around the world are competing in the steeplechase competition at the 2020 Olympics. By the outcome of the event we'll mean the determination of who gets the gold medal, who gets the silver medal, and who gets the bronze medal.

Say that three of the **13** athletes in the steeplechase competition are from Moldova. (Steeplechase is big in Moldova, apparently.) How many outcomes involve at least one Moldovian winning a medal? *Choose the best answer.*

☐  $13 \times 12 \times 11 - 3 \times 2 \times 1$

☐  $13 \times 12 \times 3$

☐  $13^3 - 10^3$

☒  $13 \times 12 \times 11 - 10 \times 9 \times 8$  ✓

You have used 1 of 2 attempts

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## Evaluation 1 Problem 6

1.0/1.0 point (graded)

Recall that by a "word" in the English alphabet we mean an arbitrary sequence of letters chosen from the **26** letters of the alphabet.

How many six-letter words in the English alphabet contain at least one vowel? (For the purposes of this problem, there are five vowels among the **26** letters of the alphabet). *Choose the best answer.*

☒  $26^6 - 21^6$  ✓

☐  $26^5 \times 21$

☐  $\frac{26!}{21!}$

☐  $6 \times 21 \times 26^5$

You have used 1 of 2 attempts

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## Evaluation 1 Problem 7

1.0/1.0 point (graded)

Recall that by a "word" in the English alphabet we mean an arbitrary sequence of letters chosen from the **26** letters of the alphabet.

How many six-letter words in the English alphabet have at least one repeated letter? (By a repeated letter, we mean any letter that appears more than once in the word, not necessarily in two adjacent letters.) *Choose the best answer.*

☐  $5 \times 26^5$

☐  $26 \times 25 \times 24 \times 23 \times 22 \times 21$

☒  $26^6 - (26 \times 25 \times 24 \times 23 \times 22 \times 21)$  ✓

☐  $26^5$

You have used 1 of 2 attempts

## Evaluation 1 Problem 8

1.0/1.0 point (graded)

Consider all numbers consisting of four different digits all between **1** and **9**. How many of these are odd? *Choose the best answer.*

☐  $\frac{9^4}{2}$

☒  $5 \times 8 \times 7 \times 6$  ✓

☐  $9 \times 8 \times 7 \times 5$

☐  $9^4 - 5^4$

Submit

You have used 1 of 2 attempts

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