

Examples P in Arithmetic 2

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Examples P

0. If we use each of 2 and 5 once only to make a 2-digit integer, how many different 2-digit integers can we make?

1. If we use each of 4, 3, and 7 once only to make a 3-digit integer, how many different 3-digit integers can we make?

2. If we use each of 8, 0, and 6 once only to make a 3-digit integer, how many different 3-digit integers can we make?

3. If we use each of 9, 3, 1, and 7 once only to make a 4-digit integer, how many different 4-digit integers can we make?

4. If we use each of 6, 8, 0, and 4 once only to make a 4-digit integer, how many different 4-digit integers can we make?

5. If we use each of 2, 5, and 7 once only to make a 2-digit integer, how many different 2-digit integers can we make?

Suggestions or Solutions To the Problems in the Examples P

0. If we use each of 2 and 5 once only to make a 2-digit integer, how many different 2-digit integers can we make?

In a 2-digit integer, the highest digit is 10's digit.

And each of the numbers given has to be used only once.

So we can make 25 and 52, and thus, can make 2 different 2-digit integers.

1. If we use each of 4, 3, and 7 once only to make a 3-digit integer, how many different 3-digit integers can we make?

In a 3-digit integer, the highest digit is 100's digit.

And each number given has to be used only once.

So we have 3 choices for the 100's digit.

Then, we get 2 choices for the 10's digit.

And then, we get 1 choice for the 1's digit.

So we get $3 \times 2 \times 1 = 6$ choices, and thus, can make 6 different 3-digit integers.

2. If we use each of 8, 0, and 6 once only to make a 3-digit integer, how many different 3-digit integers can we make?

In a 3-digit integer, the highest digit is 100's digit.

And each number given has to be used only once.

And we have 0 in the list of the numbers to be used.

We cannot use though, 0 for the 100's digit. So we have 2 choices for the 100's digit.

We can use however, 0 for any of the other lower digits. So we get 2 choices again, for the 10's digit. Then, we get 1 choice for the 1's digit.

So we get $2 \times 2 \times 1 = 4$ choices, and thus, can make 4 different 3-digit integers.

3. If we use each of 9, 3, 1, and 7 once only to make a 4-digit integer, how many different 4-digit integers can we make?

In a 4-digit integer, the highest digit is 1000's digit.

And each number given has to be used once only.

So first, we have 4 choices for the 1000's digit.

Then, we get 3 choices for the 100's digit.

Then, we get 2 choices for the 10's digit.

And then, we get 1 choice for the 1's digit.

So we get $4 \times 3 \times 2 \times 1 = 24$ choices, and thus, can make 24 different 4-digit integers.

4. If we use each of 6, 8, 0, and 4 once only to make a 4-digit integer, how many different 4-digit integers can we make?

In a 4-digit integer, the highest digit is 1000's digit.

Each number has to be used only once.

And we have 0 in the list of the numbers to be used, but cannot use it for the 1000's digit.

So we have 3 choices for the 1000's digit.

We can use though, 0 for any of the other lower digits.

So we get 3 choices again, for the 100's digit.

Then, we get 2 choice for 10's digit.

And then, we get 1 choice for the 1's digit.

So we get $3 \times 3 \times 2 \times 1 = 18$ choices, and thus, can make 18 different 4-digit integers.

5. If we use each of 2, 5, and 7 once only to make a 2-digit integer, how many different 2-digit integers can we make?

In a 2-digit integer, the highest digit is 10's digit.

We have three different numbers to choose from.

And each number has to be used once only.

So we have 3 choices for the 10's digit.

Then, we get 2 choices for the 1's digit.

So we get $3 \times 2 = 6$ choices, and thus, can make 6 different 2-digit integers.