

Tech Heroes: The Factor Quest - Save the Digital City

Math

Grade 4

Technology Theme

Join Byte the Robot and Circuit the AI as they explore the Digital City and discover the power of factors to solve mysterious tech challenges!

NAME _____

DATE _____

SCORE _____ / 8

1

Byte the Robot is organizing a digital party in the Tech Tower and needs to arrange 24 LED light bulbs into equal groups with no bulbs left over. What are all the possible ways Byte can arrange the bulbs by finding all factors of 24?

2

Circuit the AI discovers an ancient computer vault containing 18 USB drives. To crack the code, Circuit must divide the USB drives into equal groups. What are all the factor pairs of 18 that Circuit can use?

3

In the Pixel Palace, a gamer named Alex wants to arrange 32 video game controllers into rectangular formations for a tournament. What are all the factors of 32 that will help Alex create different rectangular setups?

4

Byte the Robot is stacking data servers in the Cloud Castle. If there are 20 servers total and Byte wants to make equal stacks with no servers left over, what are all the factors of 20?

5

Circuit the AI finds 36 holographic computer chips and wants to distribute them equally among different tech labs in the Digital City. How many labs could Circuit supply if each lab gets the same number of chips? List all possible factors of 36.

6

During a Cyber Adventure, Byte discovers a mysterious door that only opens when given a number that has exactly 4 factors. Which of these numbers would open the door: 12, 15, 16, or 18? List the factors to prove your answer.

7

In the Robot Factory, technician Spark needs to package 28 circuit boards into boxes. Each box must contain the same number of boards with none left over. What are all the factors of 28 that Spark can use to determine box quantities?

8

Circuit and Byte are preparing for the Tech Olympics and need to divide 30 digital medals into equal groups for different competitions. What are all the factors of 30 that will help them organize the medals?

Answer Key

Math

Grade 4

For Parents and Teachers

1

Byte the Robot is organizing a digital party in the Tech Tower and needs to arrange 24 LED light bulbs into equal groups with no bulbs left over. What are all the possible ways Byte can arrange the bulbs by finding all factors of 24?

ANSWER

1, 2, 3, 4, 6, 8, 12, 24

2

Circuit the AI discovers an ancient computer vault containing 18 USB drives. To crack the code, Circuit must divide the USB drives into equal groups. What are all the factor pairs of 18 that Circuit can use?

ANSWER

1×18, 2×9, 3×6

3

In the Pixel Palace, a gamer named Alex wants to arrange 32 video game controllers into rectangular formations for a tournament. What are all the factors of 32 that will help Alex create different rectangular setups?

ANSWER

1, 2, 4, 8, 16, 32

4

Byte the Robot is stacking data servers in the Cloud Castle. If there are 20 servers total and Byte wants to make equal stacks with no servers left over, what are all the factors of 20?

ANSWER

1, 2, 4, 5, 10, 20

5

Circuit the AI finds 36 holographic computer chips and wants to distribute them equally among different tech labs in the Digital City. How many labs could Circuit supply if each lab gets the same number of chips? List all possible factors of 36.

ANSWER

1, 2, 3, 4, 6, 9, 12, 18, 36

6

During a Cyber Adventure, Byte discovers a mysterious door that only opens when given a number that has exactly 4 factors. Which of these numbers would open the door: 12, 15, 16, or 18? List the factors to prove your answer.

ANSWER

16 (factors: 1, 2, 4, 8) - Wait, that's 4 factors but 12 also has 6 factors (1, 2, 3, 4, 6, 12), 15 has 4 factors (1, 3, 5, 15), and 18 has 6 factors (1, 2, 3, 6, 9, 18). Correct answer: 15 or 16 both work, but 15 is the clearest answer with factors 1, 3, 5, 15

7

In the Robot Factory, technician Spark needs to package 28 circuit boards into boxes. Each box must contain the same number of boards with none left over. What are all the factors of 28 that Spark can use to determine box quantities?

ANSWER

1, 2, 4, 7, 14, 28

8

Circuit and Byte are preparing for the Tech Olympics and need to divide 30 digital medals into equal groups for different competitions. What are all the factors of 30 that will help them organize the medals?

ANSWER

1, 2, 3, 5, 6, 10, 15, 30