The Factor Quest: An Artist's Adventure Through the Gallery of Numbers

Math | Grade 4 | Art Theme

Help our artist friends discover the magic of factors as they explore enchanted art galleries and solve creative challenges!

NAME _____ DATE _____ SCORE _____ / 8

1

Paintbrush Pablo is arranging 12 paintbrushes into equal groups for his art students. He wants to make sure every group has the same number of brushes with no brushes left over. What are ALL the different ways Pablo can divide his 12 brushes into equal groups? List all the factors of 12.

2

Canvas Clara is creating a rectangular mural that must have an area of 24 square feet. She wants to know all the different rectangular dimensions (length and width) she can create. Find all the factor pairs of 24 that could be the dimensions of her mural.

3

Sculptor Sam has 18 beautiful clay sculptures he wants to display on shelves in his gallery. He wants to put the same number of sculptures on each shelf with none left over. How many different ways can Sam arrange his 18 sculptures? List all the factors of 18.

4

Watercolor Wendy is organizing an art festival. She has 20 paintings to hang in equal rows on the gallery wall. What are all the possible ways she can arrange her paintings in rows of equal length with no paintings left over? Find all the factors of 20.

5

Sketch Steve is packing 16 colored pencil sets into boxes for art supply orders. He wants to put the same number of sets in each box with no sets remaining. How many different box arrangements can Steve create? List all the factors of 16.

6

Marble Megan discovered a magical number in the art museum. The mystery number has exactly these factors: 1, 3, 5, and 15. Is 9 a factor of this mystery number? Explain why or why not.

7

Mosaic Mike is creating a decorative tile pattern with 28 tiles. He needs to arrange them in rows with equal numbers of tiles per row and no tiles left over. What are all the possible row arrangements Mike can make? Find all the factors of 28.

8

Portrait Pete is framing photographs for an art exhibition. He has 15 photographs and wants to group them into equal sets for different display areas with no photos left over. What are all the different ways Pete can divide his 15 photographs into equal groups? List all the factors of 15.

Answer Key

Math | Grade 4 | For Parents and Teachers

1

Paintbrush Pablo is arranging 12 paintbrushes into equal groups for his art students. He wants to make sure every group has the same number of brushes with no brushes left over. What are ALL the different ways Pablo can divide his 12 brushes into equal groups? List all the factors of 12.

ANSWER

1, 2, 3, 4, 6, 12

2

Canvas Clara is creating a rectangular mural that must have an area of 24 square feet. She wants to know all the different rectangular dimensions (length and width) she can create. Find all the factor pairs of 24 that could be the dimensions of her mural.

ANSWER

1×24, 2×12, 3×8, 4×6

3

Sculptor Sam has 18 beautiful clay sculptures he wants to display on shelves in his gallery. He wants to put the same number of sculptures on each shelf with none left over. How many different ways can Sam arrange his 18 sculptures? List all the factors of 18.

ANSWER

1, 2, 3, 6, 9, 18

4

Watercolor Wendy is organizing an art festival. She has 20 paintings to hang in equal rows on the gallery wall. What are all the possible ways she can arrange her paintings in rows of equal length with no paintings left over? Find all the factors of 20.

ANSWER

1, 2, 4, 5, 10, 20

5

Sketch Steve is packing 16 colored pencil sets into boxes for art supply orders. He wants to put the same number of sets in each box with no sets remaining. How many different box arrangements can Steve create? List all the factors of 16.

ANSWER

1, 2, 4, 8, 16

6

Marble Megan discovered a magical number in the art museum. The mystery number has exactly these factors: 1, 3, 5, and 15. Is 9 a factor of this mystery number? Explain why or why not.

ANSWER

No, 9 is not a factor because 15 ÷ 9 does not equal a whole number

7

Mosaic Mike is creating a decorative tile pattern with 28 tiles. He needs to arrange them in rows with equal numbers of tiles per row and no tiles left over. What are all the possible row arrangements Mike can make? Find all the factors of 28.

ANSWER

1, 2, 4, 7, 14, 28

8

Portrait Pete is framing photographs for an art exhibition. He has 15 photographs and wants to group them into equal sets for different display areas with no photos left over. What are all the different ways Pete can divide his 15 photographs into equal groups? List all the factors of 15.

ANSWER

1, 3, 5, 15