Holiday Heroes and the Factor Quest

Math | Grade 4 | Holidays Theme

Help Santa and his holiday friends solve festive factor mysteries on their magical adventures!

NAME _____ DATE _____ SCORE _____ / 8

1

Santa's elves are decorating the workshop with 12 candy canes arranged in equal rows. They want to make rows without any leftover candy canes. List all the factors of 12 that would work for the number of rows.

2

Mrs. Claus is baking 18 gingerbread cookies for the reindeer. She wants to arrange them equally on plates with no cookies left over. What are all the possible numbers of plates she could use?

3

Rudolph the Red-Nosed Reindeer is organizing 24 ornaments into gift boxes. Each box must have the same number of ornaments with none left behind. List all the factors of 24.

4

The Snowman and his friends found 16 snowflake decorations at the North Pole. They want to make equal piles of snowflakes. How many different ways can they divide the 16 snowflakes into equal groups?

5

Jack Frost is hanging 20 icicle lights on the winter cabin. He wants each hook to have the same number of lights. What are all the possible numbers of hooks he could use?

6

The Christmas tree fairy needs to divide 15 magical star lights equally among the tree branches. Which of these numbers would work as a number of branches: 2, 3, 5, or 7?

7

Frosty the Snowman collected 28 holiday wreaths and wants to give them equally to different families. What are all the factors of 28 that show how many families could receive wreaths?

8

The Angel on top of the Christmas tree is packing 30 small bells into gift bags with equal amounts in each bag. How many different ways can the angel divide the 30 bells into equal groups with no bells left over?

Answer Key

Math | Grade 4 | For Parents and Teachers

1

Santa's elves are decorating the workshop with 12 candy canes arranged in equal rows. They want to make rows without any leftover candy canes. List all the factors of 12 that would work for the number of rows.

ANSWER

1, 2, 3, 4, 6, 12

2

Mrs. Claus is baking 18 gingerbread cookies for the reindeer. She wants to arrange them equally on plates with no cookies left over. What are all the possible numbers of plates she could use?

ANSWER

1, 2, 3, 6, 9, 18

3

Rudolph the Red-Nosed Reindeer is organizing 24 ornaments into gift boxes. Each box must have the same number of ornaments with none left behind. List all the factors of 24.

ANSWER

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

4

The Snowman and his friends found 16 snowflake decorations at the North Pole. They want to make equal piles of snowflakes. How many different ways can they divide the 16 snowflakes into equal groups?

ANSWER

5 ways (factors: 1, 2, 4, 8, 16)

5

Jack Frost is hanging 20 icicle lights on the winter cabin. He wants each hook to have the same number of lights. What are all the possible numbers of hooks he could use?

ANSWER

1, 2, 4, 5, 10, 20

6

The Christmas tree fairy needs to divide 15 magical star lights equally among the tree branches. Which of these numbers would work as a number of branches: 2, 3, 5, or 7?

ANSWER

3 and 5 (factors of 15)

7

Frosty the Snowman collected 28 holiday wreaths and wants to give them equally to different families. What are all the factors of 28 that show how many families could receive wreaths?

ANSWER

1, 2, 4, 7, 14, 28

8

The Angel on top of the Christmas tree is packing 30 small bells into gift bags with equal amounts in each bag. How many different ways can the angel divide the 30 bells into equal groups with no bells left over?

ANSWER

8 ways (factors: 1, 2, 3, 5, 6, 10, 15, 30)