Ratios - Exploratory Challenge

A T-shirt manufacturing company surveyed teenage girls on their favorite T-shirt color to guide the company’s decisions about how many of each color T-shirt they should design and manufacture. The results of the survey are shown here.

|  |
| --- |
| **Favorite T-Shirt Colors of Teenage Girls Surveyed**X |
|  |  |  | X |  |  |  |
|  |  |  | X | X |  |  |
|  | X |  | X | X |  | X |
|  | X |  | X | X | X | X |
|  | X | X | X | X | X | X |
| X | X | X | X | X | X | X |
| Red | Blue | Green | White | Pink | Orange | Yellow |

**Exercises for Exploratory Challenge**

1. Describe a ratio relationship, in the context of this survey, for which the ratio is $3: 5$.
2. Describe a ratio relationship, in the context of this survey, for which the ratio is 7:26.
3. For each ratio relationship given, fill in the **ratio** it is describing.

|  |  |
| --- | --- |
| **Description of the Ratio Relationship****(Underline or highlight the words or phrases that indicate the description is a ratio.)** | **Ratio** |
| For every$ 7$ white T-shirts they manufacture, they should manufacture$ 4$ yellow T-shirts. The ratio of the number of white T-shirts to the number of yellow T-shirts should be … |  |
| For every $4$ yellow T-shirts they manufacture, they should manufacture$ 7$ white T-shirts. The ratio of the number of yellow T-shirts to the number of white T-shirts should be … |  |
| The ratio of the number of girls who liked a white T-shirt best to the number of girls who liked a colored T-shirt best was … |  |
| For each red T-shirt they manufacture, they should manufacture$ 4$ blue T-shirts. The ratio of the number of red T-shirts to the number of blue T-shirts should be … |  |
| They should purchase $4$ bolts of yellow fabric for every $3$ bolts of orange fabric. The ratio of the number of bolts of yellow fabric to the number of bolts of orange fabric should be .. |  |
| The ratio of the number of girls who chose blue or green as their favorite to the number of girls who chose pink or red as their favorite was … |  |
| Three out of every $26$ T-shirts they manufacture should be orange. The ratio of the number of orange T-shirts to the total number of T-shirts should be … |  |

1. For each ratio given, fill in a **description** of the ratio relationship it could describe, using the context of the survey.

|  |  |
| --- | --- |
| **Description of the Ratio Relationship****(Underline or highlight the words or phrases that indicate your example is a ratio.)** | **Ratio** |
|  | $4$ to $3$ |
|  | $$3:4$$ |
|  | $$19:7$$ |
|  | $7$ to $26$ |

Lesson Summary

* Ratios can be written in two ways: $A$ to $B$ or $A:B$ or *A/B*.
* We describe ratio relationships with words, such as *to*, *for each*, *for every*.
* The ratio $A:B$ is not the same as the ratio $B:A$ (unless $A$ is equal to $B$).

HOMEWORK

1. Using the floor tiles design shown below, create $4$ different ratios related to the image. Describe the ratio relationship, and write the ratio in the form $A:B$, the form $A$ to $B$, or the form *A/B.*
2. Billy wanted to write a ratio of the number of apples to the number of peppers in his refrigerator. He wrote $1: 3$. Did Billy write the ratio correctly? Explain your answer.

