



Grade 9 Multi-Step Math Challenge

Solve real-world problems using fractions, order of operations, and multi-step logic.

Name: _____ Date: _____

1 SPACE

A space probe starts with 800 liters of fuel. During launch, it burns $\frac{3}{8}$ of its fuel. The remaining fuel is divided equally among 5 maneuvering thrusters. How many liters of fuel does each thruster receive?

Work: _____

Answer: _____

2 SOCCER

A soccer club scores 120 total goals during a season. $\frac{2}{5}$ of the goals are scored in home games, and $\frac{1}{3}$ of the remaining goals are scored in tournament finals. If the rest are regular away goals, how many regular away goals were scored?

Work: _____

Answer: _____

3 MERMAIDS

Marina the mermaid found 240 glowing pearls in a deep ocean trench. She traded $\frac{1}{4}$ of them to sea turtles for kelp, and then gave $\frac{3}{5}$ of what remained to decorate the coral palace. How many glowing pearls does Marina have left?

Work:

Answer: _____

4 MINECRAFT

Alex mined 360 iron ingots to build an automated sorting system. She used $\frac{4}{9}$ of the ingots to craft hoppers and $\frac{1}{5}$ of the initial total to make minecarts. If she splits the remaining ingots equally into 4 chests, how many ingots go into each chest?

Work:

Answer: _____

5 BASKETBALL

In a 30-game basketball season, Marcus averaged 18 points per game for the first $\frac{2}{3}$ of the games. For the remaining games, his average increased by 6 points per game. How many total points did Marcus score during the entire season?

Work:

Answer: _____

An observatory collected 450 deep-space signals. Astronomers discarded $\frac{2}{9}$ of them as background noise and set aside $\frac{3}{7}$ of the remaining signals for priority analysis. If the rest were split evenly among 4 research teams, how many signals did each team get?

Work:

Answer: _____

Answer Key

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1. A space probe starts with 800 liters of fuel. During launch, it burns $\frac{3}{8}$ of its fuel. The remaining fuel is divided equally among 5 maneuvering thrusters. How many liters of fuel does each thruster receive? **100**
2. A soccer club scores 120 total goals during a season. $\frac{2}{5}$ of the goals are scored in home games, and $\frac{1}{3}$ of the remaining goals are scored in tournament finals. If the rest are regular away goals, how many regular away goals were scored? **48**
3. Marina the mermaid found 240 glowing pearls in a deep ocean trench. She traded $\frac{1}{4}$ of them to sea turtles for kelp, and then gave $\frac{3}{5}$ of what remained to decorate the coral palace. How many glowing pearls does Marina have left? **72**
4. Alex mined 360 iron ingots to build an automated sorting system. She used $\frac{4}{9}$ of the ingots to craft hoppers and $\frac{1}{5}$ of the initial total to make minecarts. If she splits the remaining ingots equally into 4 chests, how many ingots go into each chest? **32**
5. In a 30-game basketball season, Marcus averaged 18 points per game for the first $\frac{2}{3}$ of the games. For the remaining games, his average increased by 6 points per game. How many total points did Marcus score during the entire season? **600**
6. An observatory collected 450 deep-space signals. Astronomers discarded $\frac{2}{9}$ of them as background noise and set aside $\frac{3}{7}$ of the remaining signals for priority analysis. If the rest were split evenly among 4 research teams, how many signals did each team get? **50**