LESSON MAKER PRO

Scores and Shares

Use rational numbers to track changes and split amounts.

GRADE 7 · 7.NOS.A.2.e

7.NOS.A.2.e "Model and solve multistep contextual problems involving multiplication and division of rational numbers, using efficient and flexible strategies."

NAME _____ DATE _____

TRACK EACH STEP

Write an expression for the starting amount and each change. A gain or rise adds to the amount, while a loss or drop subtracts from it. Multiply or divide before adding or subtracting.

WORKED EXAMPLE

A drone is 6 meters below a platform. It rises 4/5 of 25 meters, then descends 9/2 meters. Where is it relative to the platform?

1. Start at -6 m: -6 + (4/5)(25) - 9/2.
2. Multiply: -6 + 20 - 9/2.
3. Combine: 14 - 9/2 = 19/2.

Answer: 19/2 m above the platform

PRACTICE 6 problems

1 A game starts at -4 points. You earn 3/4 of 12 points, then lose 5 points. What is your score?

ANSWER _____

2 A diver is at -18 m relative to the surface. They rise 2/3 of 9 m, then rise another 7/2 m. What is their final position relative to the surface?

ANSWER _____

3 A gaming club has a balance of -$15 shared equally by 3 players. Each player then spends $2.50. What is each player's balance?

ANSWER _____

4 A video has a 3/2-minute intro and 5 clips that are each 7/10 minute long. How long is the video?

ANSWER _____

5 A tank holds 21/4 L of water. You pour it equally into 3 bottles, then add 1/8 L to each bottle. How much water is in each bottle?

ANSWER _____

6 A hiker starts at -2 1/2 m relative to a marker. They descend 3/4 m each minute for 8 minutes, then climb 11/2 m. What is their final position?

ANSWER _____

APPLY IT Show your work

1 Three friends split $16.50 in game credit equally. Each buys an avatar sticker for $1.50, then receives a refund of 1/3 of the sticker's price. How much credit does each friend have left?

WORK SPACE

ANSWER _____

2 A scooter battery starts at 3/4 full. A 5-mile ride uses 1/12 of a full charge per mile. After the ride, a charger replaces half the charge used. What fraction of a full charge is left?

WORK SPACE

ANSWER _____

CHALLENGE One step up

A team starts at -8 points. It loses 3/2 points in each of 4 rounds, then shares a 21-point bonus equally among 3 teams. Mira writes -8 + 4(3/2) + 21/3 = 5. Is she correct? Write the correct expression, find the final score, and explain the sign of the losses.

WORK SPACE AND ANSWER

ANSWER KEY

Scores and Shares

GRADE 7 · 7.NOS.A.2.e

PART 1 · PRACTICE

#	PROBLEM	ANSWER
1	A game starts at -4 points. You earn 3/4 of 12 points, then lose 5 points. What is your score?	**0 points**
2	A diver is at -18 m relative to the surface. They rise 2/3 of 9 m, then rise another 7/2 m. What is their final position relative to the surface?	**-17/2 m**
3	A gaming club has a balance of -$15 shared equally by 3 players. Each player then spends $2.50. What is each player's balance?	**-$7.50**
4	A video has a 3/2-minute intro and 5 clips that are each 7/10 minute long. How long is the video?	**5 minutes**
5	A tank holds 21/4 L of water. You pour it equally into 3 bottles, then add 1/8 L to each bottle. How much water is in each bottle?	**15/8 L**
6	A hiker starts at -2 1/2 m relative to a marker. They descend 3/4 m each minute for 8 minutes, then climb 11/2 m. What is their final position?	**-3 m relative to the marker**

PART 2 · APPLY IT

1. **$4.50** Each friend starts with $16.50 / 3 = $5.50. Subtract $1.50 and add a $0.50 refund to get $4.50.
2. **13/24 of a full charge** The ride uses 5/12 of a charge, and the charger replaces 5/24. The amount left is 3/4 - 5/12 + 5/24 = 13/24.

CHALLENGE

No. -8 - 4(3/2) + 21/3 = -7 points because losses reduce the score.

Accept equivalent fractions or decimals with correct units. For the challenge, accept an equivalent expression that subtracts the four losses.