LESSON MAKER PRO

Spot the Pattern

Use repeated rates to solve real situations.

GRADE 7 · 7.MP.8

7.MP.8 "Look for and express regularity in repeated reasoning."

NAME _____ DATE _____

FIND WHAT REPEATS

When a situation repeats at the same rate, find what happens for one unit or one equal time interval. Use that repeated amount to extend the pattern, then check that each step changes by the same amount.

WORKED EXAMPLE

At the student theater, 13 tickets cost $39. If every ticket costs the same amount, how much do 10 tickets cost?

1. Find the cost of 1 ticket: $39 / 13 = $3.
2. Use the same rate: 10 x $3 = $30.
3. Check: each ticket adds $3, so 10 tickets cost $30.

Answer: $30

PRACTICE 6 problems

1 A playlist editor takes 15 minutes to add 6 song titles. At the same pace, how long will it take to add 14 song titles? Find the time for 1 title first.

ANSWER _____

2 A dog walker covers 21 blocks in 28 minutes at a steady pace. How many minutes will it take to cover 9 blocks? Find the time for 1 block first.

ANSWER _____

3 In an online game, 5 quests earn 35 tokens when each quest earns the same number of tokens. How many tokens will 12 quests earn?

ANSWER _____

4 The robotics club uses 7/8 meter of wire for each sensor. How much wire is needed for 6 sensors?

ANSWER _____

5 At the school store, 12 sticker sheets cost $27. If every sheet has the same price, how much do 16 sticker sheets cost?

ANSWER _____

6 A skater completes 16 laps in 24 minutes at a steady pace. How many minutes will 22 laps take?

ANSWER _____

APPLY IT Show your work

1 An esports club orders custom controller decals for a fundraiser. Five decals cost $18.75. If each decal has the same price, how much will 9 decals cost?

WORK SPACE

ANSWER _____

2 At 8:00 a.m., Jordan's phone battery is 96%. During a video project, it drops 14 percentage points every 2 hours. If this regular pattern continues for 8 hours, what percent battery remains?

WORK SPACE

ANSWER _____

CHALLENGE One step up

A game designer tracks the coins unlocked at each rank. Rank 1 unlocks 17 coins, rank 2 unlocks 24 coins, rank 3 unlocks 31 coins, and rank 4 unlocks 38 coins. If the pattern continues, how many coins will rank 15 unlock? Explain your reasoning.

WORK SPACE AND ANSWER

ANSWER KEY # Spot the Pattern

GRADE 7 · 7.MP.8

PART 1 · PRACTICE

#	PROBLEM	ANSWER
1	A playlist editor takes 15 minutes to add 6 song titles. At the same pace, how long will it take to add 14 song titles? Find the time for 1 title first.	**2.5 minutes per title; 35 minutes**
2	A dog walker covers 21 blocks in 28 minutes at a steady pace. How many minutes will it take to cover 9 blocks? Find the time for 1 block first.	**4/3 minute per block; 12 minutes**
3	In an online game, 5 quests earn 35 tokens when each quest earns the same number of tokens. How many tokens will 12 quests earn?	**7 tokens per quest; 84 tokens**
4	The robotics club uses 7/8 meter of wire for each sensor. How much wire is needed for 6 sensors?	**5 1/4 meters**
5	At the school store, 12 sticker sheets cost $27. If every sheet has the same price, how much do 16 sticker sheets cost?	**$2.25 per sheet; $36**
6	A skater completes 16 laps in 24 minutes at a steady pace. How many minutes will 22 laps take?	**3/2 minutes per lap; 33 minutes**

PART 2 · APPLY IT

1. **$3.75 per decal; $33.75** Divide $18.75 by 5 to find that each decal costs $3.75. Multiply $3.75 by 9 to get $33.75.
2. **40%** There are 4 two-hour intervals in 8 hours, so the battery drops 4 x 14 = 56 percentage points. Then 96 - 56 = 40.

CHALLENGE

115 coins.

Accept equivalent rates, such as 5/2 minutes per title instead of 2.5 minutes per title. For the challenge, accept any clear explanation that identifies an increase of 7 coins for each rank and correctly counts 14 increases.