

Pattern Power Plans

Use repeated steps to solve real-life math situations.

GRADE 5 • 5.MP.8

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

NAME _____

DATE _____

NOTICE THE REPEAT

When the same amount is added, grouped, or taken away again and again, write a few steps in order. Notice what stays the same, then use the pattern to predict a later result and check that it makes sense.

WORKED EXAMPLE

At a bike-a-thon, Lena rides 14 laps each day for 4 days. How many laps does she ride altogether?

1. After day 1: 14 laps.
2. After day 2: $14 + 14 = 28$ laps.
3. After day 3: $28 + 14 = 42$ laps.
4. After day 4: $42 + 14 = 56$ laps.

Answer: 56 laps

PRACTICE 6 problems

- 1** A video game gives Inez 9 energy stars after each completed level. She completes 6 levels. Use the repeated pattern to find her total number of energy stars.

ANSWER _____

- 2** Kai makes 5 friendship bracelets. Each bracelet uses 12 beads. Use repeated addition or equal groups to find the total number of beads.

ANSWER _____

- 3** During a reading challenge, an app shows 16 points after 2 days, 24 points after 3 days, and 32 points after the next day. The total rises by the same amount each day. What total will it show after 7 days?

ANSWER _____

- 4** A snack team places 72 juice boxes into crates holding 8 juice boxes each. They subtract 8 again and again until no boxes are left. How many crates do they fill?

ANSWER _____

- 5** The drama club's warm-up lasts 15 minutes on each of 6 rehearsal days. Use a repeated-addition pattern to find the total number of warm-up minutes.

ANSWER _____

- 6** A trail team places 11 direction signs on each of 7 hiking paths. How many signs does the team place altogether?

ANSWER _____

APPLY IT Show your work

- 1** A skateboard club gives each new member 6 grip stickers. There are 13 new members. Use the pattern of adding 6 for each member to find how many grip stickers the club needs.

WORK SPACE

ANSWER _____

- 2** An arcade puts 96 prize tickets into envelopes that hold 12 tickets each. How many envelopes are filled? Use repeated subtraction or a multiplication pattern, then check your answer.

WORK SPACE

ANSWER _____

CHALLENGE One step up

CHALLENGE

A theater club arranges 23 rows of 17 seats for a school show. Adding 17 seats one row at a time would take a long time. Use the repeated pattern to find the total number of seats. Explain how you broke the rows into easier groups and check your result.

PART 1 • PRACTICE

#	PROBLEM	ANSWER
1	A video game gives Inez 9 energy stars after each completed level. She completes 6 levels. Use the repeated pattern to find her total number of energy stars.	54 energy stars
2	Kai makes 5 friendship bracelets. Each bracelet uses 12 beads. Use repeated addition or equal groups to find the total number of beads.	60 beads
3	During a reading challenge, an app shows 16 points after 2 days, 24 points after 3 days, and 32 points after the next day. The total rises by the same amount each day. What total will it show after 7 days?	56 points
4	A snack team places 72 juice boxes into crates holding 8 juice boxes each. They subtract 8 again and again until no boxes are left. How many crates do they fill?	9 crates
5	The drama club's warm-up lasts 15 minutes on each of 6 rehearsal days. Use a repeated-addition pattern to find the total number of warm-up minutes.	90 minutes
6	A trail team places 11 direction signs on each of 7 hiking paths. How many signs does the team place altogether?	77 signs

PART 2 • APPLY IT

- 78 grip stickers** There are 13 equal groups of 6 stickers. Multiply $13 \times 6 = 78$, or add 6 thirteen times.
- 8 envelopes** Subtracting 12 from 96 reaches zero in 8 steps. Check: $8 \times 12 = 96$.

CHALLENGE

391 seats. $17 \times 20 = 340$ and $17 \times 3 = 51$, so $340 + 51 = 391$. Check: $23 \times 10 + 23 \times 7 = 230 + 161 = 391$.

Accept repeated addition, multiplication, or equal-group strategies when the stated total is correct. For the challenge, accept any clear decomposition of 23 rows that totals 391.