

# Extending Decreasing Patterns

## GOAL

Describe and extend decreasing number patterns.

Janae can hardly wait for her class camping trip, which is 168 hours away. She created a pattern to show the number of days she has to wait. Her pattern is 168, 144, 120, 96, ...

 **How many days does Janae have to wait until her camping trip?**



- A.** Why do you think Janae started her pattern at 168?
- B.** By how much do the numbers in Janae's pattern decrease each time? Why do you think she chose this number?
- C.** What is Janae's pattern rule?
- D.** What number will Janae's pattern end at? How do you know?
- E.** How many days does Janae have to wait?

## Reflecting

- F.** Suppose that Janae's camping trip was 145 hours away. Could you use her pattern to show how many days she has to wait? How do you know?
- G.** Why might someone use a pattern rule to describe a pattern instead of writing out all the numbers in the pattern?

## Checking

- 1.** There are 56 days until Darren's grandparents come for a visit. He created a pattern to show the number of weeks this is. Here is how his pattern starts:  
56, 49, 42, 35, ...
  - a)** By how much do the numbers in Darren's pattern decrease each time? Why do you think he chose this number?
  - b)** What is Darren's pattern rule?
  - c)** How many weeks are there until Darren's grandparents come for a visit?





## Practising

2. Shanti had 75¢ in nickels. She gave a nickel to each of her cousins. She started the following pattern to show what she did: 75, 70, 65, 60, 55, ...
  - a) What is Shanti's pattern rule?
  - b) Shanti gave away all her nickels. How many cousins does she have? How do you know?
3. The house numbers on Lakeshore Drive decrease by 4. The number on the first house is 196.
  - a) Use a table to show the house numbers of the first 8 houses on Lakeshore Drive.

House	House number
first	196
second	192
third	

- b) How many houses are on Lakeshore Drive if the number on the last house is 152?
4. Each number in Lian's pattern is 2 less than the number before it. Could any of his numbers be odd? Explain.
5. Erin put 4 carrot sticks in each plastic bag. She used the pattern 19, 15, 11, 7, 3 to figure out how many plastic bags she needed.
  - a) How does Erin's pattern show 19 divided by 4?
  - b) What does the 3 in the pattern represent?
  - c) How many plastic bags did Erin need?
6. Describe the pattern 10, 20, 30, 40, 50, ... using the phrase "10 more than." Then describe this pattern using the phrase "10 less than."
7. How is extending a decreasing pattern the same as extending an increasing pattern? How is it different?

