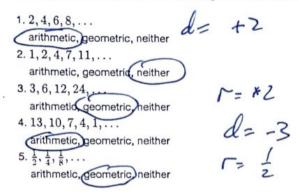
### Quiz 2: HSF-BF.A.2 Identify and use sequences

### Identify arithmetic and geometric sequences

Dircle whether the sequence is arithmetic, geometric, or neither.



#### Write recursive formulas

6. Write a recursive formula for the sequence  $5, 10, 15, 20, \ldots$ 

$$f(i) = 5$$
  
 $f(n) = f(n-1) + 5$   $n \ge 2$ 

7. Write a recursive formula for the sequence  $3,9,27,81,\ldots$ 

$$f(1) = 3$$
  
 $f(n) = f(n-1) * 3 n \ge 2$ 

#### Apply sequences as models

8. A metal sculture is made from welded steel rods. The first rod is 3 feet long. Each successive rod is 80% of the length of the previous rod. Indicate whether each formula correctly defines the length L(n) of the nth rod by circling True or False.

a. 
$$L(n)=3(0.8)^n$$
True False
b.  $L(n)=3(0.8)^{n-1}$ 
True False
c.  $L(n)=3-0.20n$ 
True, alse
d.  $L(1)=3$ 
 $L(n)=L(n-1)(0.8)$ 
True, False

$$f(n) = \frac{3}{5}(n-1) \times 0.80 \quad n \ge 2$$
or
$$L(n) = \frac{3}{5} \times (0.80)^{(n-1)} \quad n \ge 1$$

# Fractions, percent, decimals (7-NS)

Nrite each fraction as a percent and as a decimal.

9. 1

25% 0,25

10.  $\frac{1}{2}$ 

50% 0,5

11.  $\frac{1}{3}$ 

332%

0.3

Nrite each percent as a fraction in simplest terms.

12.75%

13.  $66\frac{2}{3}\%$ 

14. 150%

1/2 or 3

### Operations on fractions

15. 
$$\frac{1}{2} + \frac{1}{3} =$$

16. 
$$\frac{1}{2} - \frac{1}{3} =$$

17. 
$$\frac{3}{2} \times \frac{1}{2} =$$

18. 
$$\frac{1}{2} \div \frac{2}{3} =$$

# Use standard algebraic function notation

19. Given the arithmetic sequence f(n) whose first two terms are 4 and 9.

- a. Write down f(2)
- b. Write down the value of the common difference d
- c. Find f(3)
- d. Write and equation relating f(5) and f(6)

6) d= 9-4=5

c) f(3) = 9+5=14

d) f/6)= fo)+5

- 20. Given the geometric sequence g(n) whose first term is 3 with a growth rate of r=2.
  - a. Find the second term g(2).
  - b. State the value of the first term using function notation in an equation.
  - c. Define g recursively using function notation. (There should be two equations)
  - d. Write down the value of  $\frac{g(7)}{g(6)}$

- a) g(z) = 3.2 = 6
- 6) 9(1) = 3
- e) g(1)=3
- d)  $\frac{g(n)}{g(6)} = 2$

21. A sequence is defined recursively as

$$f(1) = 2$$

$$f(n) = f(n-1) \times 5$$

a. Is the sequence arithmetic, geometric, or neither?

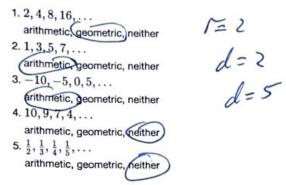
b. Find the value of f(3).

2,10,50

# Quiz 2: HSF-BF.A.2 Identify and use sequences

### Identify arithmetic and geometric sequences

Circle whether the sequence is arithmetic, geometric, or neither.



#### Write recursive formulas

6. Write a recursive formula for the sequence  $1, 5, 25, 125, \ldots$ 

$$f(i) = 1$$

$$f(n) = f(n-i) \times 5 \qquad n \ge 2$$

7. Write a recursive formula for the sequence  $3, 9, 15, 21, \ldots$ 

$$f(1) = 3$$
  
 $f(n) = f(n-1) + 6$   $n \ge 2$ 

#### Apply sequences as models

8. A metal sculture is made from welded steel rods. The first rod is 3 feet long. Each successive rod is 80% of the length of the previous rod. Indicate whether each formula correctly defines the length L(n) of the nth rod by circling True or False.

a. 
$$L(n) = 3 - 0.80(n - 1)$$
True False

b.  $L(n) = 3(0.8)^n$ 

True, False

c.  $L(n) = 3(0.8)^{n-1}$ 

Thue, False

d.  $L(n) = 3(0.8)^{n-1}$ 

Left False

Left False

Left False

Left False

Left False

Left False