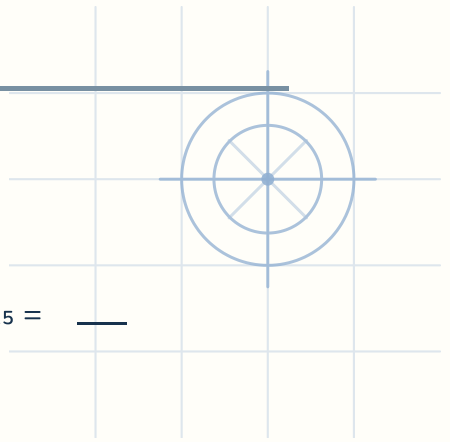


Arithmetic and geometric sequences — The nth term of an arithmetic sequence

Name: _____

Date: _____

Find the term shown for each sequence.



1 6, -1, -8, -15, ... $a_{25} = \underline{-162}$

$$d = -7$$
$$a_n = 6 + (n - 1) \times -7$$
$$a_{25} = 6 + 24 \times -7$$
$$6 + -168 = -162$$
$$a_{25} = -162$$

2 0, 3, 6, 9, ... $a_{25} = \underline{\hspace{2cm}}$

3 9, 13, 17, 21, ... $a_{19} = \underline{\hspace{2cm}}$

4 12, 16, 20, 24, ... $a_{15} = \underline{\hspace{2cm}}$

5 -7, -9, -11, -13, ... $a_{23} = \underline{\hspace{2cm}}$

6 3, 5, 7, 9, ... $a_{14} = \underline{\hspace{2cm}}$

7 12, 17, 22, 27, ... $a_{22} = \underline{\hspace{2cm}}$

8 -2, -3, -4, -5, ... $a_{15} = \underline{\hspace{2cm}}$

9 10, 13, 16, 19, ... $a_{19} = \underline{\hspace{2cm}}$

10 -6, -9, -12, -15, ... $a_{23} = \underline{\hspace{2cm}}$

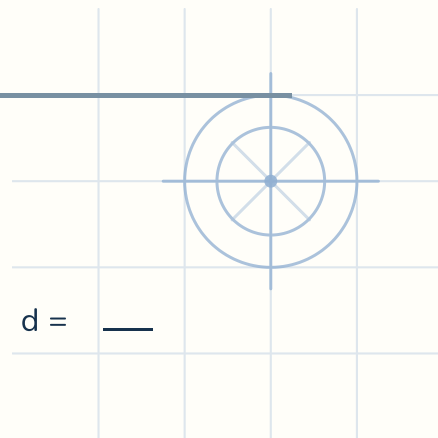


Arithmetic and geometric sequences — The common difference

Name: _____

Date: _____

Find the common difference of each sequence.



1 2, 4, 6, 8, 10, ... $d = \underline{2}$
 $4 - 2 = 2$
 $d = 2$

2 -2, 0, 2, 4, 6, ... $d = \underline{\quad}$

3 2, 9, 16, 23, 30, ... $d = \underline{\quad}$

4 0, -1, -2, -3, -4, ... $d = \underline{\quad}$

5 10, 11, 12, 13, 14, ... $d = \underline{\quad}$

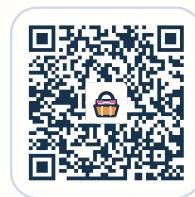
6 -5, -13, -21, -29, -37, ... $d = \underline{\quad}$

7 1, 0, -1, -2, -3, ... $d = \underline{\quad}$

8 4, 6, 8, 10, 12, ... $d = \underline{\quad}$

9 -4, 0, 4, 8, 12, ... $d = \underline{\quad}$

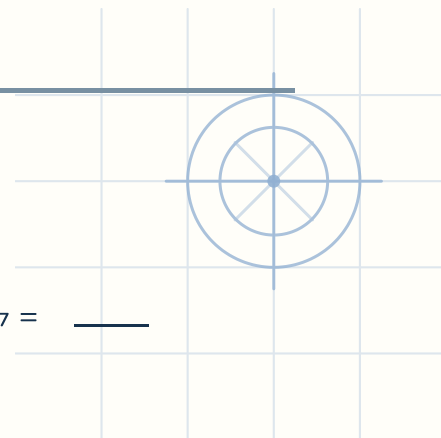
10 12, 9, 6, 3, 0, ... $d = \underline{\quad}$



Name: _____

Date: _____

Find the term shown for each geometric sequence.



1 1, 3, 9, ... $a_7 =$ 729

$$r = 3$$

$$a_n = 1 \times 3^{(n-1)}$$

$$a_7 = 1 \times 3^6$$

$$1 \times 729 = 729$$

$$a_7 = 729$$

2 6, 12, 24, ... $a_7 =$ _____

3 8, -16, 32, ... $a_6 =$ _____

4 7, -14, 28, ... $a_8 =$ _____

5 5, 10, 20, ... $a_9 =$ _____

6 1, 3, 9, ... $a_6 =$ _____

7 2, 4, 8, ... $a_8 =$ _____

8 6, -12, 24, ... $a_9 =$ _____

9 5, 15, 45, ... $a_7 =$ _____

10 3, -6, 12, ... $a_8 =$ _____

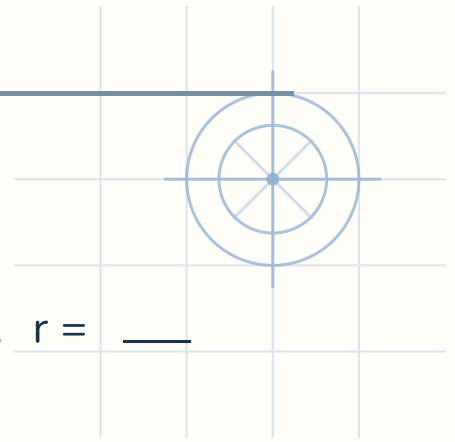


Arithmetic and geometric sequences — The common ratio

Name: _____

Date: _____

Find the common ratio of each sequence.



1 8, 40, 200, ... $r = 5$
 $40 \div 8 = 5$
 $r = 5$

2 1, -4, 16, ... $r =$ _____

3 1, 5, 25, ... $r =$ _____

4 2, -8, 32, ... $r =$ _____

5 4, 12, 36, ... $r =$ _____

6 1, 6, 36, ... $r =$ _____

7 3, 9, 27, ... $r =$ _____

8 4, -16, 64, ... $r =$ _____

9 7, 35, 175, ... $r =$ _____

10 1, -2, 4, ... $r =$ _____



Power Pack · Sequences — Answer key

Arithmetic: nth term

1. 6, -1, -8, -15, ... the 25th term = -162

2. 0, 3, 6, 9, ... the 25th term = 72

3. 9, 13, 17, 21, ... the 19th term = 81

4. 12, 16, 20, 24, ... the 15th term = 68

5. -7, -9, -11, -13, ... the 23rd term = -51

6. 3, 5, 7, 9, ... the 14th term = 29

7. 12, 17, 22, 27, ... the 22nd term = 117

8. -2, -3, -4, -5, ... the 15th term = -16

9. 10, 13, 16, 19, ... the 19th term = 64

10. -6, -9, -12, -15, ... the 23rd term = -72

Arithmetic: common difference

1. 2, 4, 6, 8, 10, ... the common difference = 2

2. -2, 0, 2, 4, 6, ... the common difference = 2

3. 2, 9, 16, 23, 30, ... the common difference = 7

4. 0, -1, -2, -3, -4, ... the common difference = -1

5. 10, 11, 12, 13, 14, ... the common difference = 1

6. -5, -13, -21, -29, -37, ... the common difference = -8

7. 1, 0, -1, -2, -3, ... the common difference = -1

8. 4, 6, 8, 10, 12, ... the common difference = 2

9. -4, 0, 4, 8, 12, ... the common difference = 4

10. 12, 9, 6, 3, 0, ... the common difference = -3

Geometric: nth term

1. 1, 3, 9, ... the 7th term = 729

2. 6, 12, 24, ... the 7th term = 384

3. 8, -16, 32, ... the 6th term = -256

4. 7, -14, 28, ... the 8th term = -896

5. 5, 10, 20, ... the 9th term = 1280

6. 1, 3, 9, ... the 6th term = 243

7. 2, 4, 8, ... the 8th term = 256

8. 6, -12, 24, ... the 9th term = 1536

9. 5, 15, 45, ... the 7th term = 3645

10. 3, -6, 12, ... the 8th term = -384

Geometric: common ratio

1. 8, 40, 200, ... the common ratio = 5

2. 1, -4, 16, ... the common ratio = -4

3. 1, 5, 25, ... the common ratio = 5

4. 2, -8, 32, ... the common ratio = -4

5. 4, 12, 36, ... the common ratio = 3

6. 1, 6, 36, ... the common ratio = 6

7. 3, 9, 27, ... the common ratio = 3

8. 4, -16, 64, ... the common ratio = -4

9. 7, 35, 175, ... the common ratio = 5

10. 1, -2, 4, ... the common ratio = -2

