Name: _____ Date: _____

Find the term shown for each sequence.

1 6, −1, −8, −15, ... a_{25} = −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} = ____

3 9, 13, 17, 21, ... a_{19} = ____

4 12, 16, 20, 24, ... a_{15} = ____

5 −7, −9, −11, −13, ... a_{23} = ____

6 3, 5, 7, 9, ... a_{14} = ____

7 12, 17, 22, 27, ... a_{22} = ____

8 −2, −3, −4, −5, ... a_{15} = ____

9 10, 13, 16, 19, ... a_{19} = ____

10 −6, −9, −12, −15, ... a_{23} = ____

Name: _____ Date: _____

Find the common difference of each sequence.

1 2, 4, 6, 8, 10, ... d = 2

4 – 2 = 2
d = 2

2 −2, 0, 2, 4, 6, ... d = ___

3 2, 9, 16, 23, 30, ... d = ___

4 0, −1, −2, −3, −4, ... d = ___

5 10, 11, 12, 13, 14, ... d = ___

6 −5, −13, −21, −29, −37, ... d = ___

7 1, 0, −1, −2, −3, ... d = ___

8 4, 6, 8, 10, 12, ... d = ___

9 −4, 0, 4, 8, 12, ... d = ___

10 12, 9, 6, 3, 0, ... d = ___

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 = _____

Name: _____ Date: _____

Find the common ratio of each sequence.

1. 8, 40, 200, ... r = 5

   40 ÷ 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