

Chapter 1 Warm-Up

Section 1.1 Warm-Up

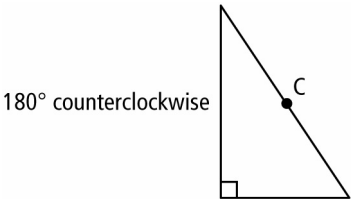
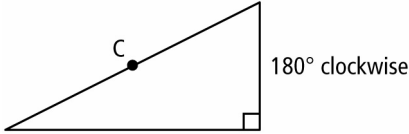
- Describe the pattern demonstrated by each of the following.
 - 2, 4, 6, 8, ...
 - 1, 4, 7, 10, ...
 - 5, 11, 17, ...
- Solve for x .
 - $35 = 3x - 4$
 - $64 = -2(x - 3)$
- If $g(n) = 6n - 11$, determine
 - $g(1)$
 - $g(0)$
 - $g(-3)$
- For each system of linear equations, use elimination or addition to solve for x .
 - $$22 = 2x - y$$

$$12 + 2x = 3y$$
 - $$7 = \frac{1}{2}x + \frac{1}{2}y$$

$$-10 - x = 2y$$
- Consider the equation $y = 4x - 1$.
 - Determine the slope and y -intercept of the line.
 - Create a table of values for values of x from 0 to 5.

Section 1.2 Warm-Up

- Identify whether each of the following is an arithmetic sequence. If so, state the values of t_1 and d .
 - 2, 4, 6, ...
 - 5, 10, -20 ...
 - 1, 4, 7, ...
 - 6, -1, 4, ...
- For $t_n = t_1 + (n - 1)d$,
 - explain the meaning of t_n , t_1 , n , and d
 - determine t_{26} for 3, 6, 9, ...
 - determine t_1 if $t_{30} = 82$ and $d = 3$
 - write the general form for 2, 6, 10, ...
- Simplify each equation.
 - $y = 2[3(x - 1) + 3]$
 - $y = \frac{1}{2}[4(x + 2) - 6]$
 - $y = \frac{2}{3}(27 + 54x)$
- Solve the following linear system for x and y .

$$2y - 3x = 5 \text{ and } 3y = -5x + 1$$
- Copy each diagram into your notebook and sketch the resulting rotations about the point C.
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Section 1.3 Warm-Up

- Determine whether each pattern represents an arithmetic sequence. If it does, state the value of t_1 and d . If it does not represent an arithmetic sequence, explain why.
 - 2, 4, 6, ...
 - 2, 4, 8, ...
 - 5, 3, 1, ...
 - 4, -2, -1, ...
- For the arithmetic sequence -6, -3, 0, ...,
 - what is the general term t_n ?
 - determine S_{10} .
- A 20 cm \times 16 cm photograph of a company logo is being used for advertisements. Determine the new dimensions if the photograph needs to be
 - enlarged 240% to create a poster.
 - reduced by 25% to fit in a book.
- Use technology to determine each value to the nearest hundredth.
 - $\sqrt[3]{45}$
 - $\sqrt[3]{16}$
 - $\sqrt[25]{28\,712}$
 - $\sqrt[3]{125} = \frac{3}{7}s$
- Using elimination, solve for r in the following system.

$$4r + s = 10$$

$$2r + s = -44$$
 - Using substitution, solve for r in the following system.

$$s = \frac{4}{3}r$$

$$3s + r = 256$$

Section 1.4 Warm-Up

- Determine whether each sequence is arithmetic, geometric, or neither.
 - 0.6, 0.66, 0.666, ...
 - 5, 6, 7, ...
 - 4, -4, 4, ...
 - $\frac{1}{4}, \frac{1}{16}, \frac{1}{64}, \dots$
 - $\frac{17}{5}, \frac{12}{5}, \frac{7}{5}, \dots$
- For each sequence,
 - determine r .
 - write the next two terms.
 - determine the general term t_n .
 - 2, -6, 18, ...
 - $5, \frac{-10}{3}, \frac{20}{9}, \frac{-40}{27}, \dots$
- What is n in the sequence 2, 14, 98, ..., 4802? Justify your work.
- What is r in each of the following?
 - $125 = \frac{1}{5}r^4$
 - $1, \frac{1}{6}, \frac{1}{36}, \dots, \frac{1}{7776}$
- If $t_2 = 28$ and $t_5 = 1792$, what are the values of t_1 , r , and t_n ?



Section 1.5 Warm-Up

1. Identify whether each series is arithmetic or geometric. Then, determine S_{18} to the nearest tenth, if appropriate.

a) $3 + \frac{5}{2} + 2 + \dots$

b) $3 + \frac{3}{2} + \frac{3}{4} + \dots$

c) $10 + 13 + 16 + \dots$

d) $12 + 24 + 48 + \dots$

2. Consider the series

$$1 - \frac{1}{3} + \frac{1}{9} - \frac{1}{27} + \dots + \frac{1}{59\,049}.$$

- a) Determine t_1 , r , and n .

- b) Write the general form for t_n .

- c) Determine the sum of the series, to the nearest hundredth.

3. Draw a 6 cm line and label the endpoints A and B. Locate the midpoint between points A and B and label it C. Locate the midpoint between points A and C and label it D. Suppose this process continues with points E and F, respectively.

- a) Write a sequence that represents the process.

- b) If the next point is included, determine the length of segment AG.

4. Write each fraction as a repeating decimal.

a) $\frac{2}{9}$

b) $\frac{23}{99}$

c) $\frac{47}{999}$

5. Simplify. Express each answer in fraction form.

a) $\frac{3}{4} \left(2 - \frac{4}{5} \right)^2$

b) $-\frac{2}{5} \left(1 + \frac{1}{6} \right)^3$

6. Evaluate. Express each answer to the nearest hundredth.

a) $\left(\frac{1}{2} \right)^4$

b) $\left(\frac{1}{2} \right)^6$

c) $\left(\frac{1}{2} \right)^8$

