

Day 6**Algebra 1**

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|---|---|
| Standards | <i>A1.AREI.6a</i> <i>Solve systems of linear equations using the elimination method.</i> <i>A1.AREI.6b</i> <i>Solve systems of linear equations using linear combination.</i> |
| Learning Targets/I Can Statements | I can use substitution to solve a system of linear equations. I can use elimination to solve a system of linear equations. I can use graphs to solve system of linear equations. |
| Essential Question(s) | What does the number of solutions (none, one or infinite) of a system of linear equations represent? <ul style="list-style-type: none">• What are the advantages and disadvantages of solving a system of linear equations graphically versus algebraically?• How can systems of equations be used to represent situations and solve problems? |
| Resources | https://www.mathsisfun.com/algebra/systems-linear-equations.html https://www.khanacademy.org/math/algebra-home/alg-system-of-equations/alg-equivalent-systems-of-equations/v/solving-systems-of-equations-by-elimination https://www.khanacademy.org/math/algebra/x2f8bb11595b61c86:systems-of-equations/x2f8bb11595b61c86:equivalent-systems-of-equations-and-the-elimination-method/v/simple-elimination-practice |
| Learning Activities or Experiences | 1 st : Recall questions (attached) 2 nd : Watch the Khan Academy video (link above) system of linear equation substitution and elimination method Alternative: Notes on systems on linear equations (elimination and substitution method) 3 rd : System of linear equations game 4 th : Assignment |

Recall Questions

Elimination Method Using Addition and Subtraction:

In systems of equations where the coefficient (the number in front of the variable) of the x or y terms are additive inverses, solve the system by adding the equations. Because one of the variables is eliminated, this method is called **elimination**.

Example 2:

Use elimination to solve the system of equations

$$x - 3y = 7 \text{ and } 3x + 3y = 9.$$

Add the two equations.

$$\begin{array}{r} x - 3y = 7 \\ + 3x + 3y = 9 \\ \hline 4x = 16 \\ \frac{4x}{4} = \frac{16}{4} \end{array}$$

$$x = 4$$

Substitute 4 for x in either original equation. Then solve for y.

$$\begin{array}{r} x - 3y = 7 \\ 4 - 3y = 7 \\ - 3y = 3 \\ \frac{-3y}{3} = \frac{3}{3} \end{array}$$

$$y = -1$$

The solution of this system is (4, -1).

Use elimination to solve each system of equations:

1. $2x + 2y = -2$
 $3x - 2y = 12$

2. $4x - 2y = -1$
 $-4x + 4y = -2$

3. $x - y = 2$
 $x + y = -3$

(,)

(,)

(,)

4. $6x + 5y = 4$
 $6x - 7y = -20$

5. $2x - 3y = 12$
 $4x + 3y = 24$

Day 7**Algebra 1**

| | |
|---|---|
| Standards | <i>A1.AREI.6a</i> <i>Solve systems of linear equations using the substitution method.</i> <i>A1.AREI.6b</i> <i>Solve systems of linear equations using linear combination.</i> |
| Learning Targets/I Can Statements | I can use substitution to solve a system of linear equations. I can use elimination to solve a system of linear equations. I can use graphs to solve system of linear equations. |
| Essential Question(s) | What does the number of solutions (none, one or infinite) of a system of linear equations represent? • What are the advantages and disadvantages of solving a system of linear equations graphically versus algebraically? • How can systems of equations be used to represent situations and solve problems? |
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| Learning Activities or Experiences | 1 st : Recall questions (attached) 2 nd : Watch the Khan Academy video (link above) system of linear equation substitution and elimination method Alternative: Notes on systems on linear equations (elimination and substitution method) 3 rd : System of linear equations game 4 th : Game on system of linear equations 5 th : Assignment |

Recall Questions

4.2 Practice - Substitution

Solve each system by substitution.

$$\begin{aligned} 1) \quad & y = -3x \\ & y = 6x - 9 \end{aligned}$$

$$\begin{aligned} 3) \quad & y = -2x - 9 \\ & y = 2x - 1 \end{aligned}$$

$$\begin{aligned} 5) \quad & y = 6x + 4 \\ & y = -3x - 5 \end{aligned}$$

$$\begin{aligned} 7) \quad & y = 3x + 2 \\ & y = -3x + 8 \end{aligned}$$

$$\begin{aligned} 9) \quad & y = 2x - 3 \\ & y = -2x + 9 \end{aligned}$$

$$\begin{aligned} 11) \quad & y = 6x - 6 \\ & -3x - 3y = -24 \end{aligned}$$

$$\begin{aligned} 13) \quad & y = -6 \\ & 3x - 6y = 30 \end{aligned}$$

$$\begin{aligned} 15) \quad & y = -5 \\ & 3x + 4y = -17 \end{aligned}$$

$$\begin{aligned} 17) \quad & -2x + 2y = 18 \\ & y = 7x + 15 \end{aligned}$$

$$\begin{aligned} 19) \quad & y = -8x + 19 \\ & -x + 6y = 16 \end{aligned}$$

$$\begin{aligned} 2) \quad & y = x + 5 \\ & y = -2x - 4 \end{aligned}$$

$$\begin{aligned} 4) \quad & y = -6x + 3 \\ & y = 6x + 3 \end{aligned}$$

$$\begin{aligned} 6) \quad & y = 3x + 13 \\ & y = -2x - 22 \end{aligned}$$

$$\begin{aligned} 8) \quad & y = -2x - 9 \\ & y = -5x - 21 \end{aligned}$$

$$\begin{aligned} 10) \quad & y = 7x - 24 \\ & y = -3x + 16 \end{aligned}$$

$$\begin{aligned} 12) \quad & -x + 3y = 12 \\ & y = 6x + 21 \end{aligned}$$

$$\begin{aligned} 14) \quad & 6x - 4y = -8 \\ & y = -6x + 2 \end{aligned}$$

$$\begin{aligned} 16) \quad & 7x + 2y = -7 \\ & y = 5x + 5 \end{aligned}$$

$$\begin{aligned} 18) \quad & y = x + 4 \\ & 3x - 4y = -19 \end{aligned}$$

$$\begin{aligned} 20) \quad & y = -2x + 8 \\ & -7x - 6y = -8 \end{aligned}$$

Day 8

Algebra 1

| | |
|---|--|
| Standards | <i>A1.AREI.6a</i> <i>Solve systems of linear equations by graphing.</i> <i>A1.AREI.6b</i> <i>Solve systems of linear equations using linear combination.</i> |
| Learning Targets/I Can Statements | I can graph to solve a system of linear equations. I can use elimination to solve a system of linear equations. I can use substitution to solve system of linear equations. |
| Essential Question(s) | What does the number of solutions (none, one or infinite) of a system of linear equations represent? <ul style="list-style-type: none">• What are the advantages and disadvantages of solving a system of linear equations graphically versus algebraically?• How can systems of equations be used to represent situations and solve problems? |
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| Learning Activities or Experiences | 1 st : Recall questions (attached) 2 nd : Watch the Khan Academy video (link above) system of linear equation substitution and elimination method Alternative: Notes on systems on linear equations (elimination and substitution method) 3 rd : System of linear equations game 4 th : Game on system of linear equations 5 th : Assignment |

Recall Questions

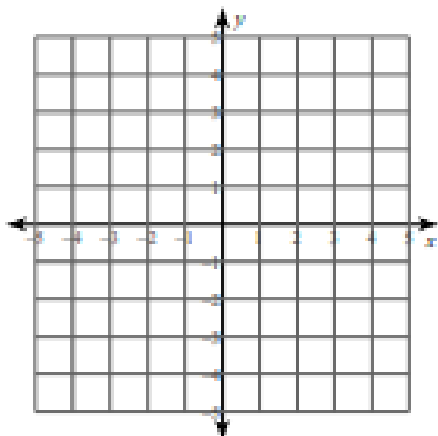
Solving Systems of Equations by Graphing

Date _____

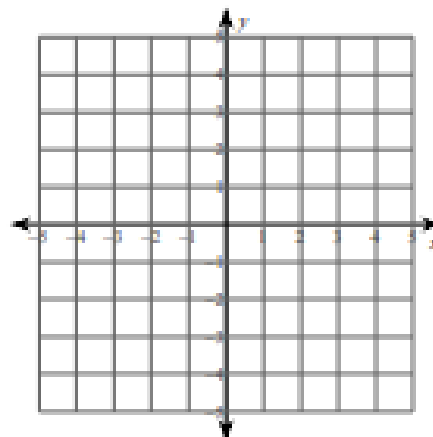
Solve each system by graphing.

1) $y = -\frac{5}{3}x + 3$

$$y = \frac{1}{3}x - 3$$

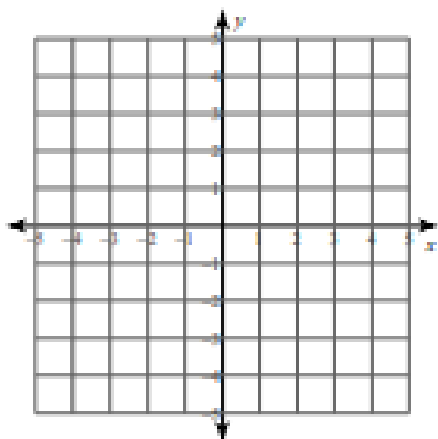


2) $y = 4x + 3$
 $y = -x - 2$

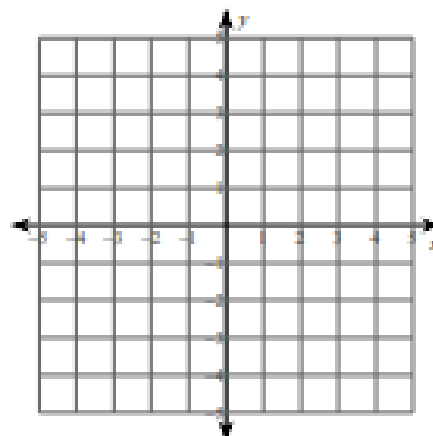


3) $y = -\frac{1}{2}x - 1$

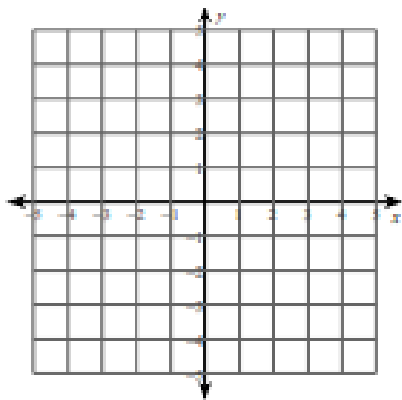
$$y = \frac{1}{4}x - 4$$



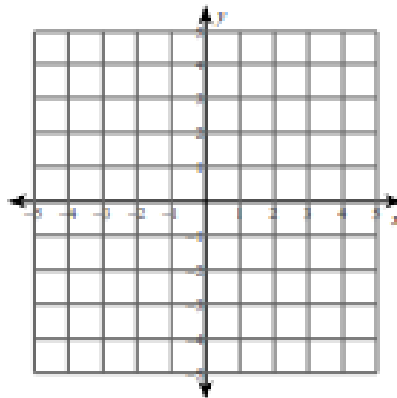
4) $y = -1$
 $y = -\frac{5}{2}x + 4$



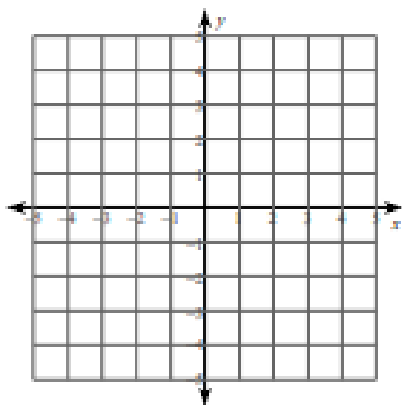
5) $y = 3x - 4$
 $y = -\frac{1}{2}x + 3$



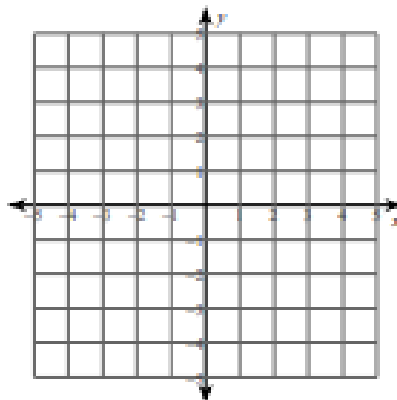
6) $y = -2x + 2$
 $y = -2x - 2$



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



8) $y = \frac{1}{3}x - 3$
 $y = -x + 1$



Day 9

Algebra 1

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|-----------------------------------|---|
| Standards | <p>F.IF.A.1: Understand that a function from one set (called the domain) to another set (called the range) assigns to each element of the domain exactly one element of the range. If f is a function and x is an element of its domain, then $f(x)$ denotes the output of f corresponding to the input x. The graph of f is the graph of the equation $y = f(x)$.</p> <ul style="list-style-type: none">• F.IF.A.2: Use function notation, evaluate functions for inputs in their domains, and interpret statements that use function notation in terms of a context.• F.IF.B.4: For a function that models a relationship between two quantities, interpret key features of graphs and tables in terms of the quantities, and sketch graphs showing key features given a verbal description of the relationship.• F.IF.B.5: Relate the domain of a function to its graph and, where applicable, to the quantitative relationship it describes.• A.REI.D.10: Understand that the graph of an equation in two variables is the set of all its solutions plotted in the coordinate plane, often forming a curve (which could be a line). |
| Learning Targets/I Can Statements | <ul style="list-style-type: none">• I can find the domain of a square root function.• I can find the domain and range of a function from the algebraic form.• Graph linear functions.• Graph quadratic functions.• Graph radical functions |
| Essential Question(s) | <p>How can you represent and describe functions? How can functions describe and represent real-world situations, model predictions and solve problems?</p> |
| Resources | <p>https://www.khanacademy.org/math/algebra/x2f8bb11595b61c86:functions/x2f8bb11595b61c86:inputs-and-outputs-of-a-function/e/functions_matching_inputs_outputs</p> <p>https://www.khanacademy.org/math/algebra/x2f8bb11595b61c86:functions/x2f8bb11595b61c86:inputs-and-outputs-of-a-function/v/finding-input-given-function-output-formula</p> <p>https://www.khanacademy.org/math/algebra/x2f8bb11595b61c86:functions/x2f8bb11595b61c86:inputs-and-outputs-of-a-function/v/matching-function-input-to-output-with-graph</p> <p>http://www.shodor.org/interactivate/activities/LinearFunctMachine/</p> |

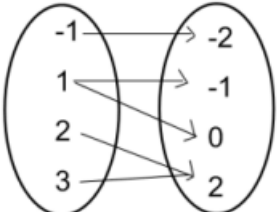
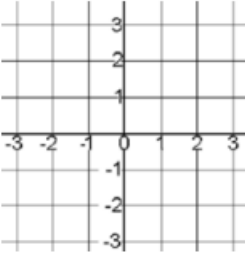
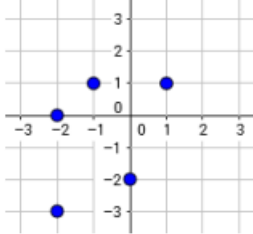
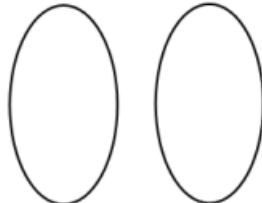
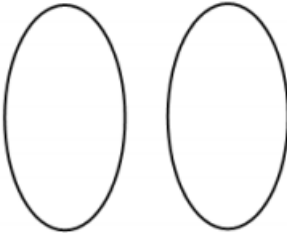
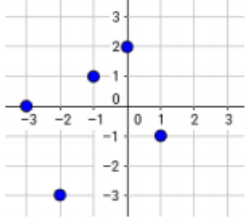
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| Learning Activities or Experiences | 1 st : Recall questions (attached) 2 nd : Watch the Khan Academy video (link above) Alternative: Notes on functions- finding input and output 3 rd : Matching functions 4 th : Games on function 5 th : Assignment |
|------------------------------------|--|

Recall Questions

Practice: Relations & Functions

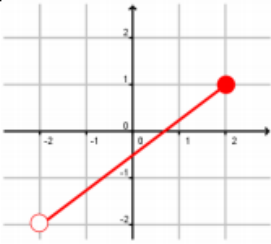
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| Final corrections due: | |
|------------------------|--|

Use the given form of each relation to complete the other forms. Then determine if the relation is a function.

| <p>1] Rewrite the relation given in the mapping diagram as a scatterplot.</p> <div style="display: flex; align-items: center; justify-content: space-around;">   </div> <p>Is the relation also a function?</p> | <p>2] Rewrite the relation given in the scatter plot as a mapping diagram.</p> <div style="display: flex; align-items: center; justify-content: space-around;">   </div> <p>Is the relation also a function?</p> | | | | | | | | | | | | |
|--|---|---|---|----|----|----|---|---|---|---|---|---|---|
| <p>3] Rewrite the relation given in the table as a mapping diagram.</p> <table style="margin-left: 20px; border-collapse: collapse;"> <thead> <tr> <th style="border-right: 1px solid black; padding: 5px;">x</th> <th style="padding: 5px;">y</th> </tr> </thead> <tbody> <tr><td style="border-right: 1px solid black; padding: 5px;">1</td><td style="padding: 5px;">-2</td></tr> <tr><td style="border-right: 1px solid black; padding: 5px;">-3</td><td style="padding: 5px;">-1</td></tr> <tr><td style="border-right: 1px solid black; padding: 5px;">1</td><td style="padding: 5px;">0</td></tr> <tr><td style="border-right: 1px solid black; padding: 5px;">2</td><td style="padding: 5px;">2</td></tr> <tr><td style="border-right: 1px solid black; padding: 5px;">0</td><td style="padding: 5px;">3</td></tr> </tbody> </table> <div style="display: flex; align-items: center; justify-content: center; margin-top: 10px;">  </div> <p>Is the relation also a function?</p> | x | y | 1 | -2 | -3 | -1 | 1 | 0 | 2 | 2 | 0 | 3 | <p>4] Rewrite the relation given in the scatter plot as a set of ordered pairs (NOT a table).</p> <div style="display: flex; align-items: center; justify-content: center; margin-top: 10px;">  </div> <p>Is the relation also a function?</p> |
| x | y | | | | | | | | | | | | |
| 1 | -2 | | | | | | | | | | | | |
| -3 | -1 | | | | | | | | | | | | |
| 1 | 0 | | | | | | | | | | | | |
| 2 | 2 | | | | | | | | | | | | |
| 0 | 3 | | | | | | | | | | | | |

Identify the domain and range, then determine if each graph shows a function or a relation only.

5]

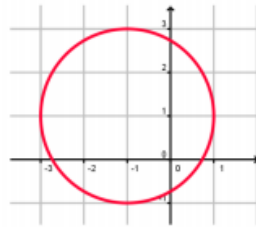


Domain:

Range:

Function?

6]

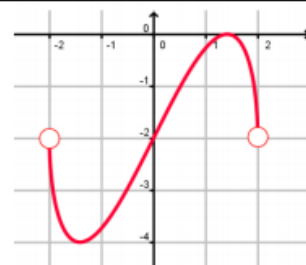


Domain:

Range:

Function?

7]

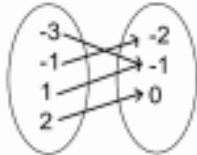
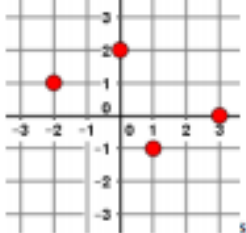
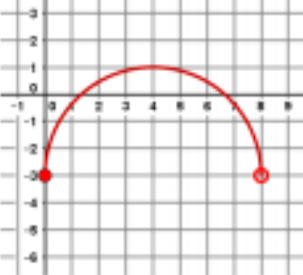
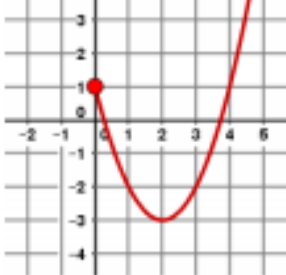
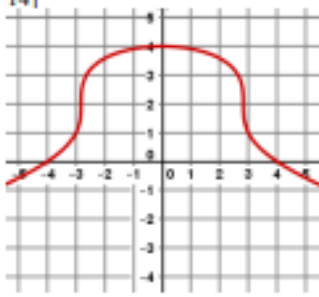
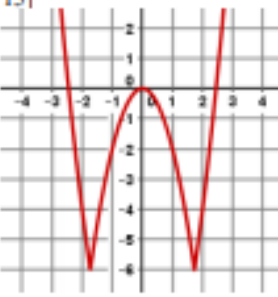
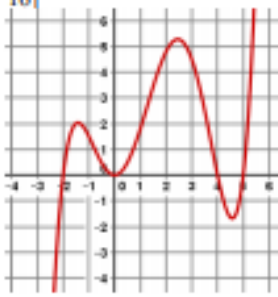


Domain:

Range:

Function?

Identify the domain and range, then evaluate each function for the given value of x .

| <p>8] $f = \{(10,7), (-2,4), (5,3), (4,10)\}$</p> <p>Domain:</p> <p>Range:</p> <p>$f(10) =$</p> | <p>9]</p> <table border="1" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th>X</th> <th>Y</th> </tr> </thead> <tbody> <tr> <td>-3</td> <td>3</td> </tr> <tr> <td>-1</td> <td>1</td> </tr> <tr> <td>0</td> <td>0</td> </tr> <tr> <td>1</td> <td>1</td> </tr> </tbody> </table> <p>Domain:</p> <p>Range:</p> <p>$f(-1) =$</p> | X | Y | -3 | 3 | -1 | 1 | 0 | 0 | 1 | 1 | <p>10]</p>  <p>Domain:</p> <p>Range:</p> <p>$f(-3) =$</p> |
|---|--|--|---|----|---|----|---|---|---|---|---|---|
| X | Y | | | | | | | | | | | |
| -3 | 3 | | | | | | | | | | | |
| -1 | 1 | | | | | | | | | | | |
| 0 | 0 | | | | | | | | | | | |
| 1 | 1 | | | | | | | | | | | |
| <p>11]</p>  <p>Domain:</p> <p>Range:</p> <p>$f(3) =$</p> | <p>12]</p>  <p>Domain:</p> <p>Range:</p> <p>$f(0) =$</p> | <p>13]</p>  <p>Domain:</p> <p>Range:</p> <p>$f(4) =$</p> | | | | | | | | | | |
| <p>14]</p>  <p>Domain:</p> <p>Range:</p> <p>$f(-3) =$</p> | <p>15]</p>  <p>Domain:</p> <p>Range:</p> <p>$f(2) =$</p> | <p>16]</p>  <p>Domain:</p> <p>Range:</p> <p>$f(-2) =$</p> | | | | | | | | | | |

Day 10

Algebra 1

| | |
|------------------------------------|---|
| Standards | <p>F.IF.A.1: Understand that a function from one set (called the domain) to another set (called the range) assigns to each element of the domain exactly one element of the range. If f is a function and x is an element of its domain, then $f(x)$ denotes the output of f corresponding to the input x. The graph of f is the graph of the equation $y = f(x)$.</p> <ul style="list-style-type: none">• F.IF.A.2: Use function notation, evaluate functions for inputs in their domains, and interpret statements that use function notation in terms of a context.• F.IF.B.4: For a function that models a relationship between two quantities, interpret key features of graphs and tables in terms of the quantities, and sketch graphs showing key features given a verbal description of the relationship.• F.IF.B.5: Relate the domain of a function to its graph and, where applicable, to the quantitative relationship it describes.• A.REI.D.10: Understand that the graph of an equation in two variables is the set of all its solutions plotted in the coordinate plane, often forming a curve (which could be a line). |
| Learning Targets/I Can Statements | <ul style="list-style-type: none">• I can find the domain of a square root function.• I can find the domain and range of a function from the algebraic form.• Evaluating functions |
| Essential Question(s) | <p>How do you evaluate functions? How can functions describe and represent real-world situations, model predictions and solve problems?</p> |
| Resources | <p>https://www.khanacademy.org/math/algebra/x2f8bb11595b61c86:functions/x2f8bb11595b61c86:evaluating-functions/e/functions_1</p> <p>https://www.khanacademy.org/math/algebra/x2f8bb11595b61c86:functions/x2f8bb11595b61c86:evaluating-functions/v/understanding-function-notation-example-1</p> <p>https://www.khanacademy.org/math/algebra/x2f8bb11595b61c86:functions/x2f8bb11595b61c86:evaluating-functions/e/evaluate-functions-from-their-graph</p> |
| Learning Activities or Experiences | <p>1st: Recall questions (attached) 2nd: Watch the Khan Academy video (link above) Alternative: Notes on evaluating functions 3rd: Matching functions 4th: Games on function 5th: Assignment</p> |

Recall Questions

Practice#1

Evaluate each function.

1) $f(x) = 4x + 2$; Find $f(8)$

2) $h(x) = 4x - 2$; Find $h(-9)$

3) $f(x) = 4x + 1$; Find $f(3)$

4) $g(x) = 3x - 5$; Find $g(-2)$

5) $f(x) = 3x - 5$; Find $f(2)$

6) $w(a) = a - 1$; Find $w(0)$

7) $w(n) = n - 1$; Find $w(-4)$

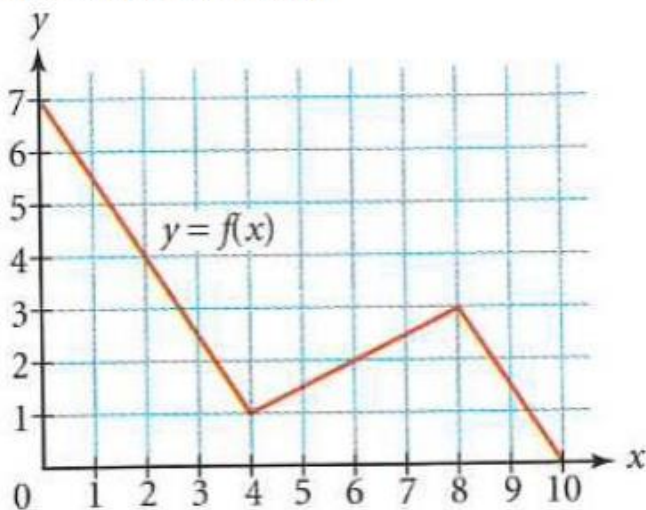
8) $w(n) = -2n - 1$; Find $w(3)$

9) $h(n) = 3n - 4$; Find $h(-6)$

10) $f(x) = 2x + 1$; Find $f(3)$

Practice #2

A Look at the graph below



In the graph above $f(4) = 1$.

Find the following values of the function.

$f(6) =$ $f(2) =$

$f(0) =$ $f(5) =$

For which values of x is this statement true?

$f(x) = 1$

Practice#3

1) $w(n) = n - 5$; Find $w(4)$

2) $g(x) = -|x|$; Find $g(-4)$

3) $p(x) = 4x - 2$; Find $p(2)$

4) $h(n) = 3|n + 2|$; Find $h(5)$

5) $h(x) = 3|2x|$; Find $h(6)$

6) $h(x) = |-2x - 3| - 3$; Find $h(5)$

7) $h(n) = 3n + 5$; Find $h(4)$

8) $k(a) = |a| + 1$; Find $k(-7)$

9) $k(x) = x + 5$; Find $k(5)$

10) $g(n) = |n| - 2$; Find $g(-9)$