

Silent Function Factory

Great for **t-table** practice

Develops **problem-solving** skills

Ideal for **Guess and Check** strategies

Excellent for **number line** development

Encourages **mental math**

QUIET thinking activity

Students can generate problems

Promotes **higher-level** mathematical thinking

Good **group activity**



Silent Function Factory

“In grades 5–8, the mathematics curriculum should include **explorations of patterns** and functions so that students can describe and represent relationships with **tables**, graphs, and **rules**; and **analyze functional relationships** to explain how a change in one quantity results in a change in another.”

–NCTM, *Curriculum and Evaluation Standards for School Mathematics*



Silent Function Factory

Add numbers to the function.

Place your numbers under the value of x .

Predict the formula for $y = f(x)$.

x : -5 -4 -3 -2 -1 0 1 2 3 4 5 6

y :



Silent Function Factory *Function # 1*

Add numbers to the function.

Place your numbers under the value of x .

Predict the formula for $y = f(x)$.

x:	-5	-4	-3	-2	-1	0	1	2	3	4	5	6
y:								4				



Silent Function Factory *Function # 1*

Add numbers to the function.

Place your numbers under the value of x .

Predict the formula for $y = f(x)$.

x:	-5	-4	-3	-2	-1	0	1	2	3	4	5	6
y:			-6					4				



Silent Function Factory *Function # 1*

Add numbers to the function.

Place your numbers under the value of x .

Predict the formula for $y = f(x)$.

x:	-5	-4	-3	-2	-1	0	1	2	3	4	5	6
y:			-6			0		4				



Silent Function Factory *Function # 1*

Add numbers to the function.

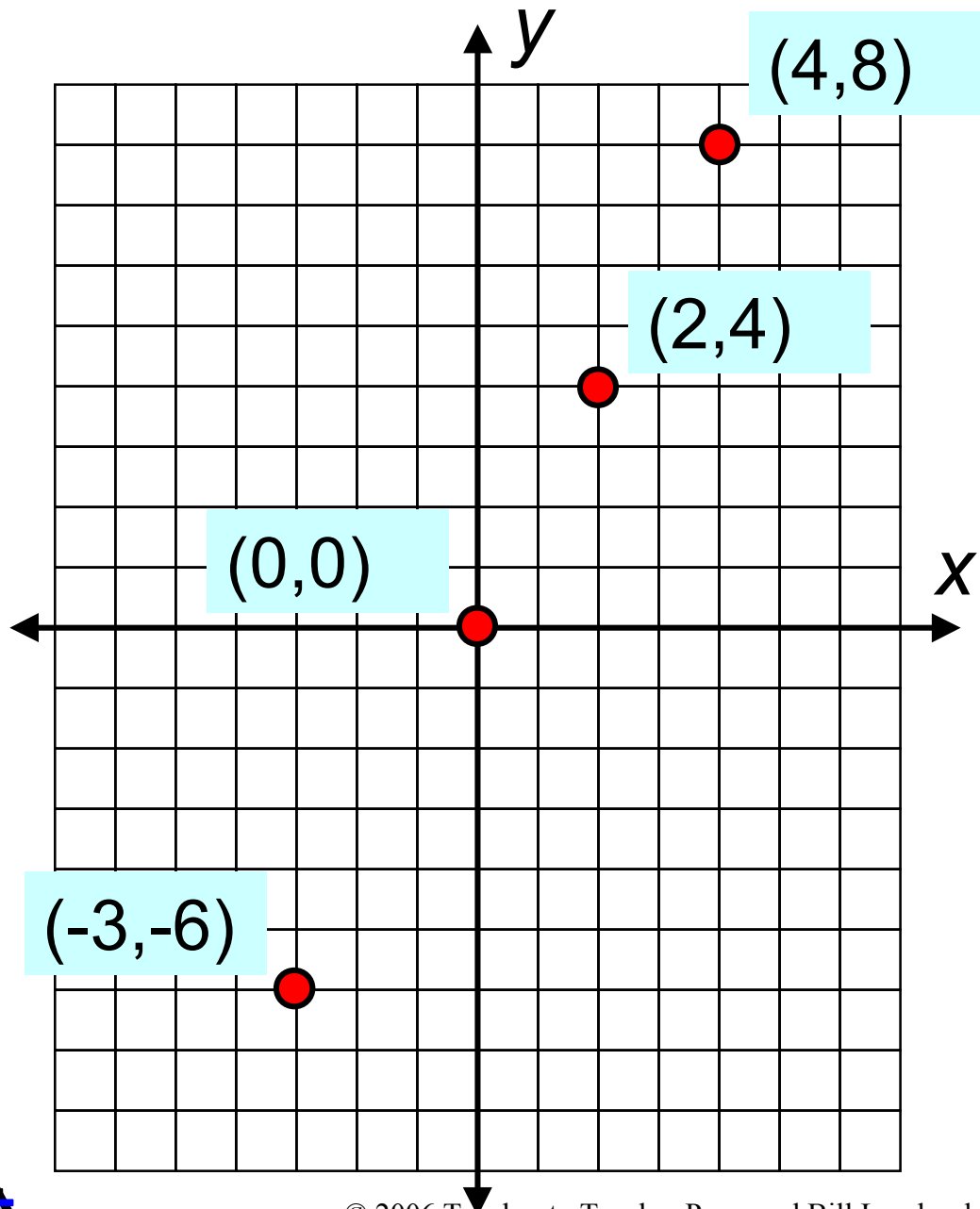
Place your numbers under the value of x .

Predict the formula for $y = f(x)$.

x:	-5	-4	-3	-2	-1	0	1	2	3	4	5	6
y:			-6			0		4		8		

$$y = 2x$$



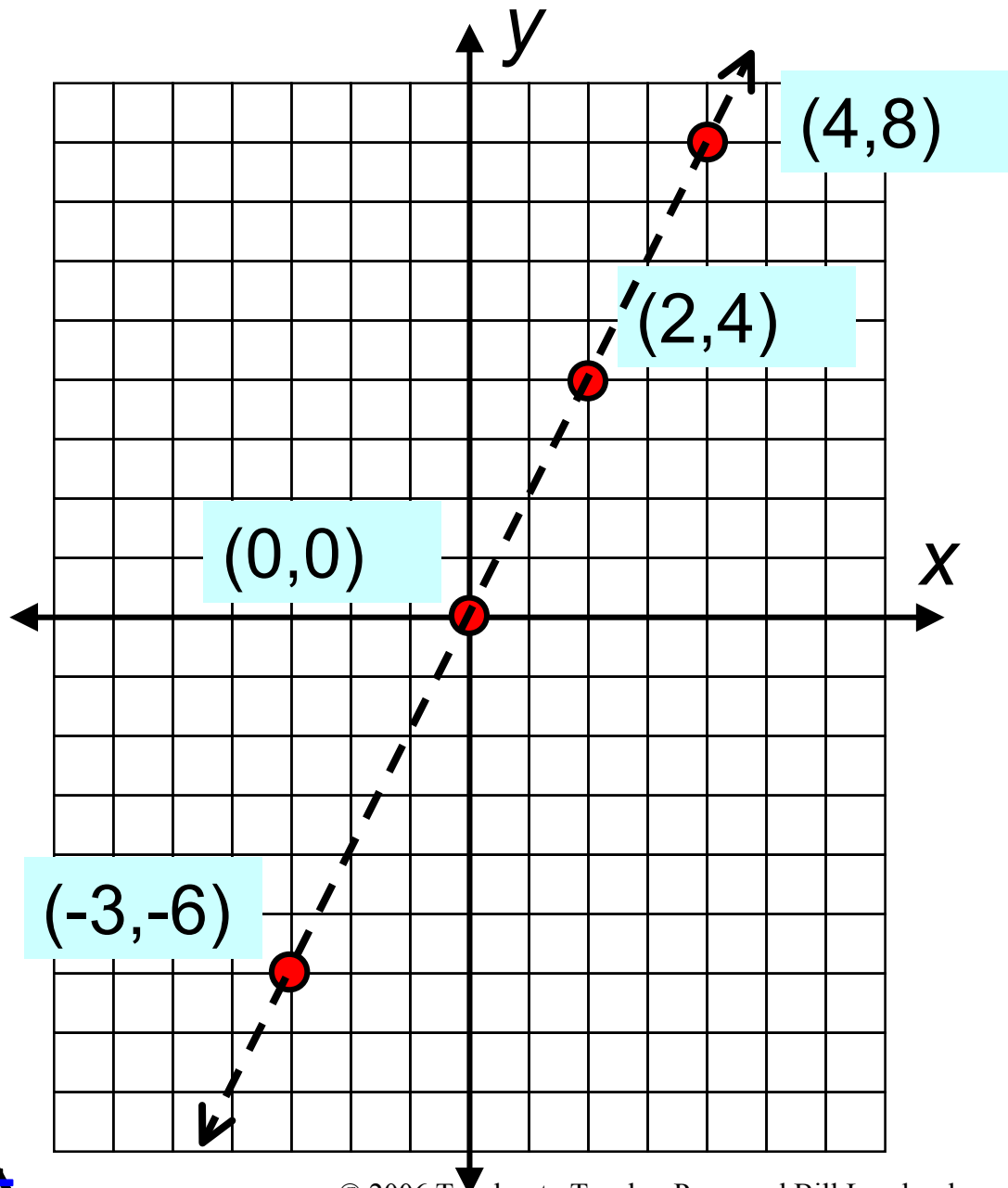


Function # 1

$$y = 2x$$

linear





Function # 1

$$y = 2x$$

linear



Silent Function Factory *Function # 2*

Add numbers to the function.

Place your numbers under the value of x .

Predict the formula for $y = f(x)$.

x:	-5	-4	-3	-2	-1	0	1	2	3	4	5	6
y:						1						



Silent Function Factory *Function # 2*

Add numbers to the function.

Place your numbers under the value of x .

Predict the formula for $y = f(x)$.

x:	-5	-4	-3	-2	-1	0	1	2	3	4	5	6
y:						1		7				



Silent Function Factory *Function # 2*

Add numbers to the function.

Place your numbers under the value of x .

Predict the formula for $y = f(x)$.

x:	-5	-4	-3	-2	-1	0	1	2	3	4	5	6
y:			-8			1		7				



Silent Function Factory *Function # 2*

Add numbers to the function.

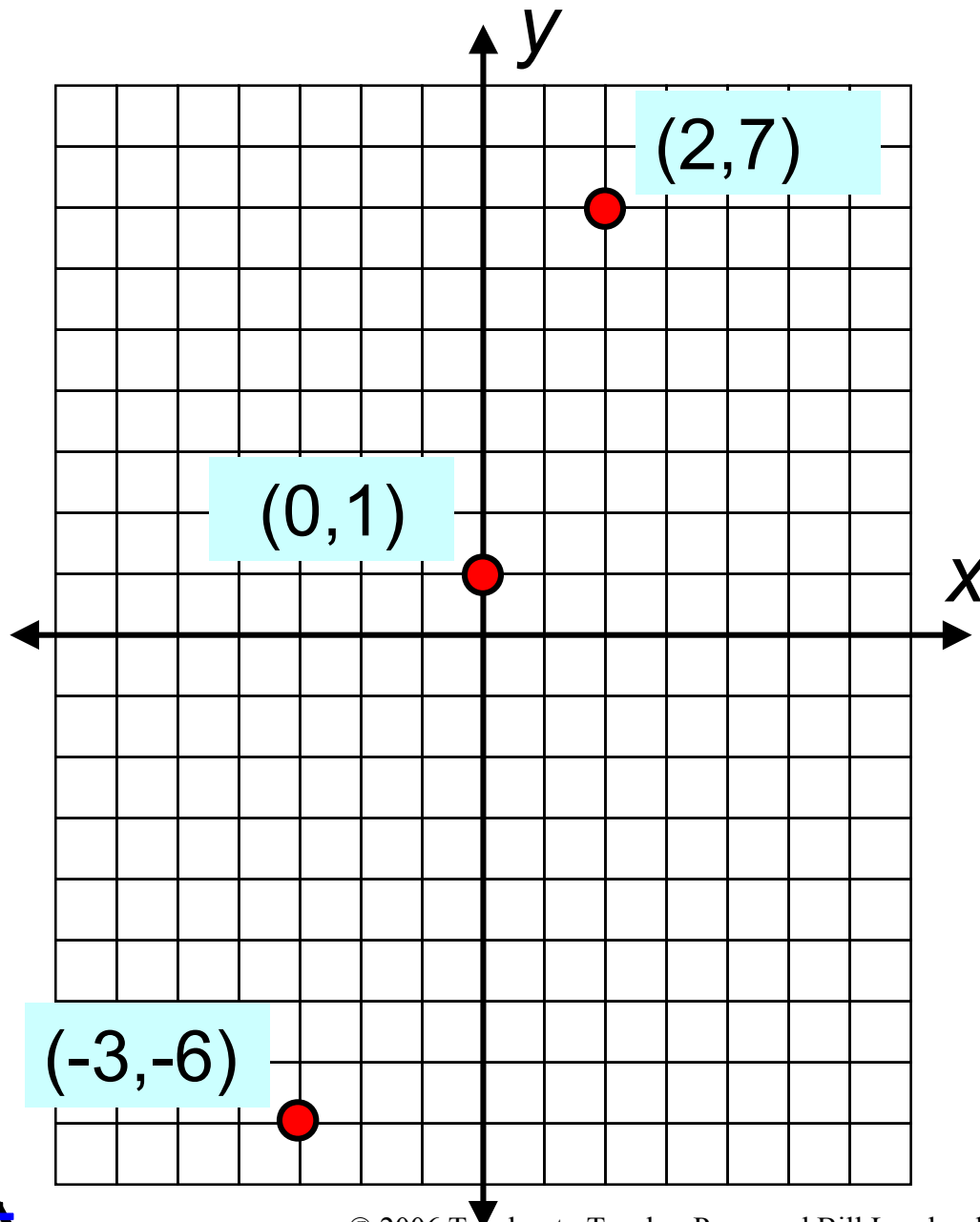
Place your numbers under the value of x .

Predict the formula for $y = f(x)$.

x:	-5	-4	-3	-2	-1	0	1	2	3	4	5	6
y:			-8			10		7			16	

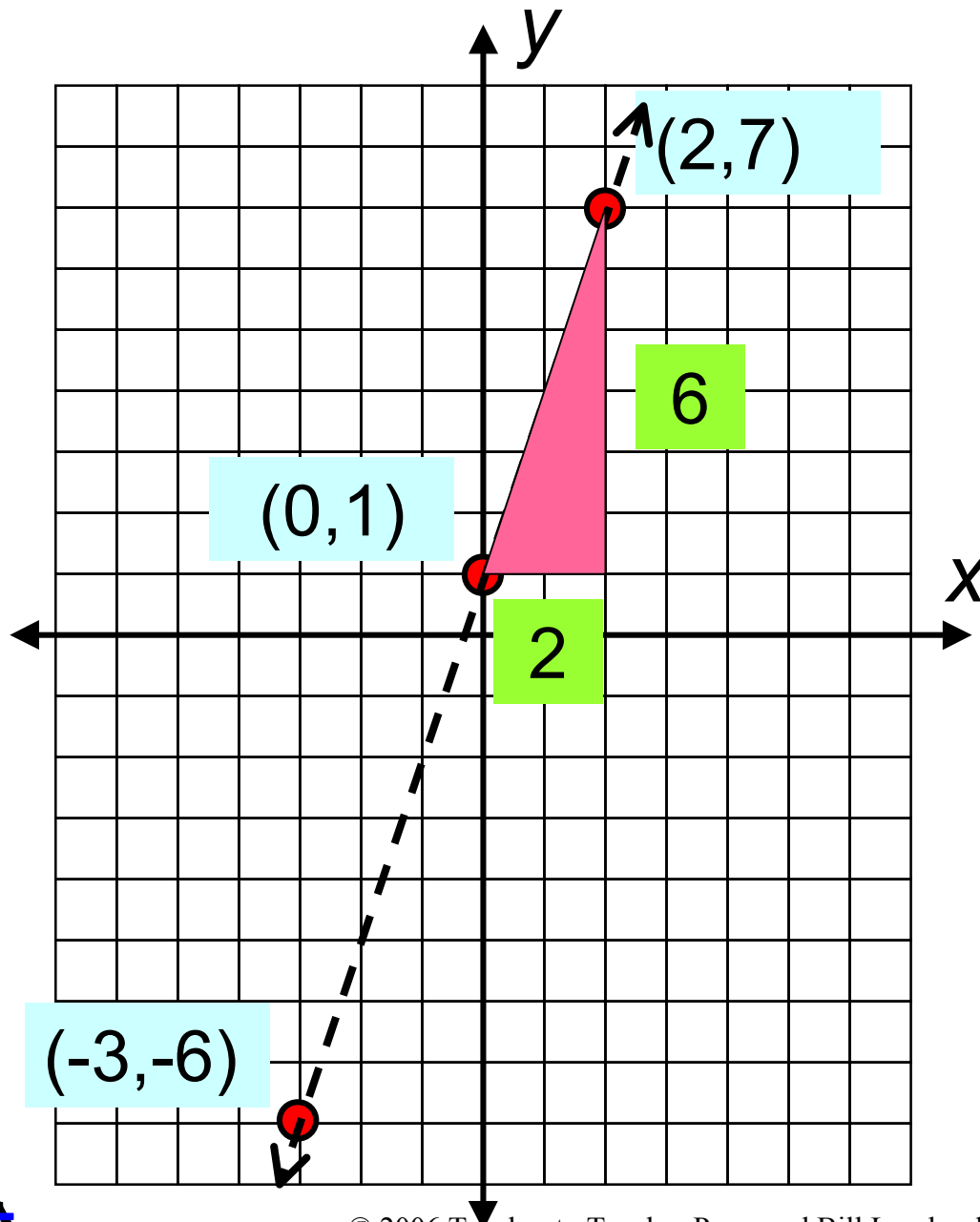
$$y = 3x + 1$$





Function # 1
 $y = 3x + 1$
linear





Slope Triangle

$$\text{slope} = \frac{6}{2} = 3$$

Function # 1

$$y = 3x + 1$$

linear



Silent Function Factory

CA 7th grade Algebra & Functions Standard 3.3
Graph linear functions . . . Know that the ratio (“rise over run”) is called the slope of a graph.

CA 5th Grade Algebra Standard 1.2

Use a letter to represent an unknown number; write and evaluate simple algebraic expressions in one variable by substitution.



Silent Function Factory *Function # 3*

Add numbers to the function.

Place your numbers under the value of x .

Predict the formula for $y = f(x)$.

x:	-5	-4	-3	-2	-1	0	1	2	3	4	5	6
y:								3				



Silent Function Factory *Function # 3*

Add numbers to the function.

Place your numbers under the value of x .

Predict the formula for $y = f(x)$.

x:	-5	-4	-3	-2	-1	0	1	2	3	4	5	6
y:						5		3				



Silent Function Factory *Function # 3*

Add numbers to the function.

Place your numbers under the value of x .

Predict the formula for $y = f(x)$.

x:	-5	-4	-3	-2	-1	0	1	2	3	4	5	6
y:		9				5		3				



Silent Function Factory *Function # 3*

Add numbers to the function.

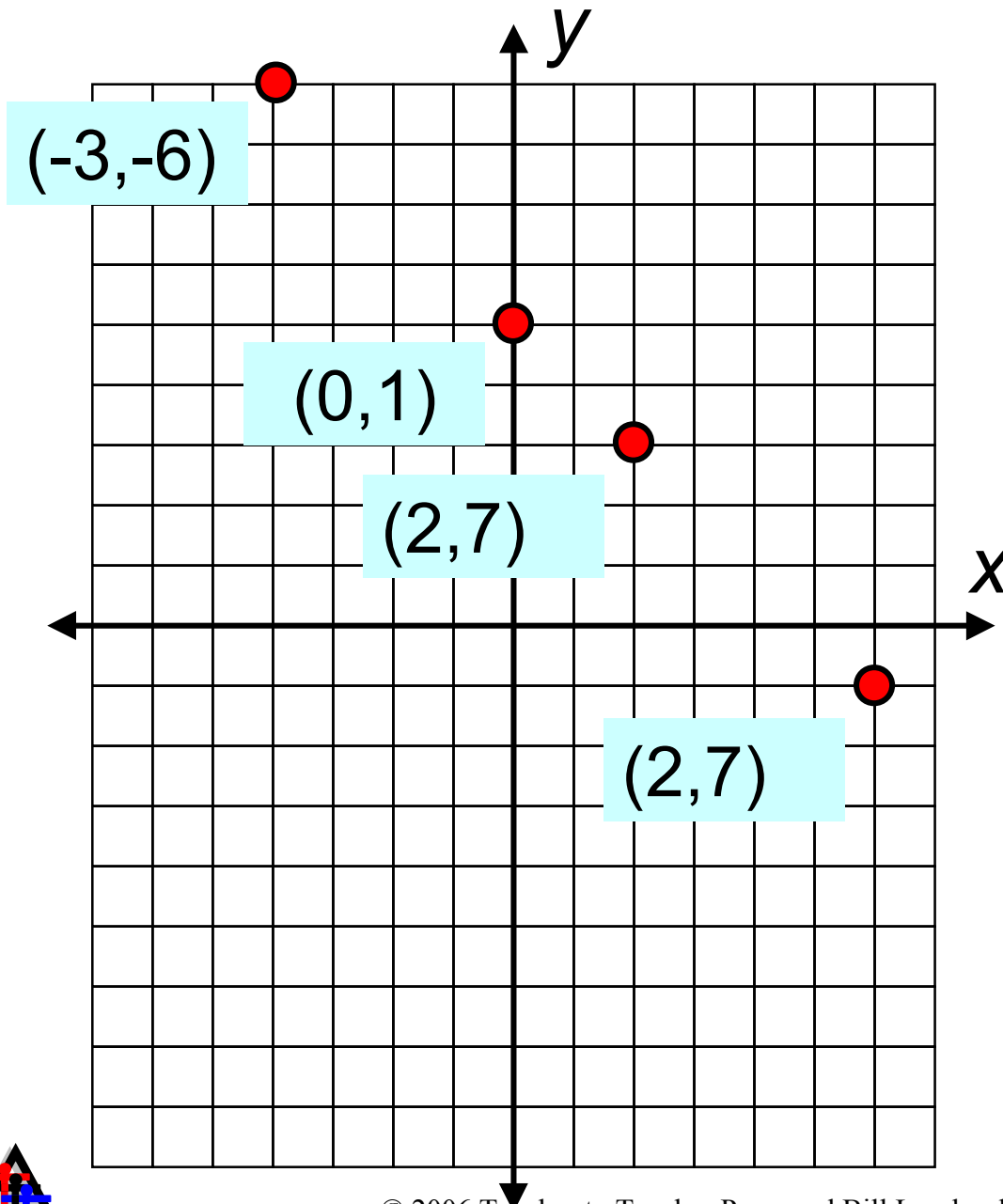
Place your numbers under the value of x .

Predict the formula for $y = f(x)$.

x:	-5	-4	-3	-2	-1	0	1	2	3	4	5	6
y:		9				5		3				-1

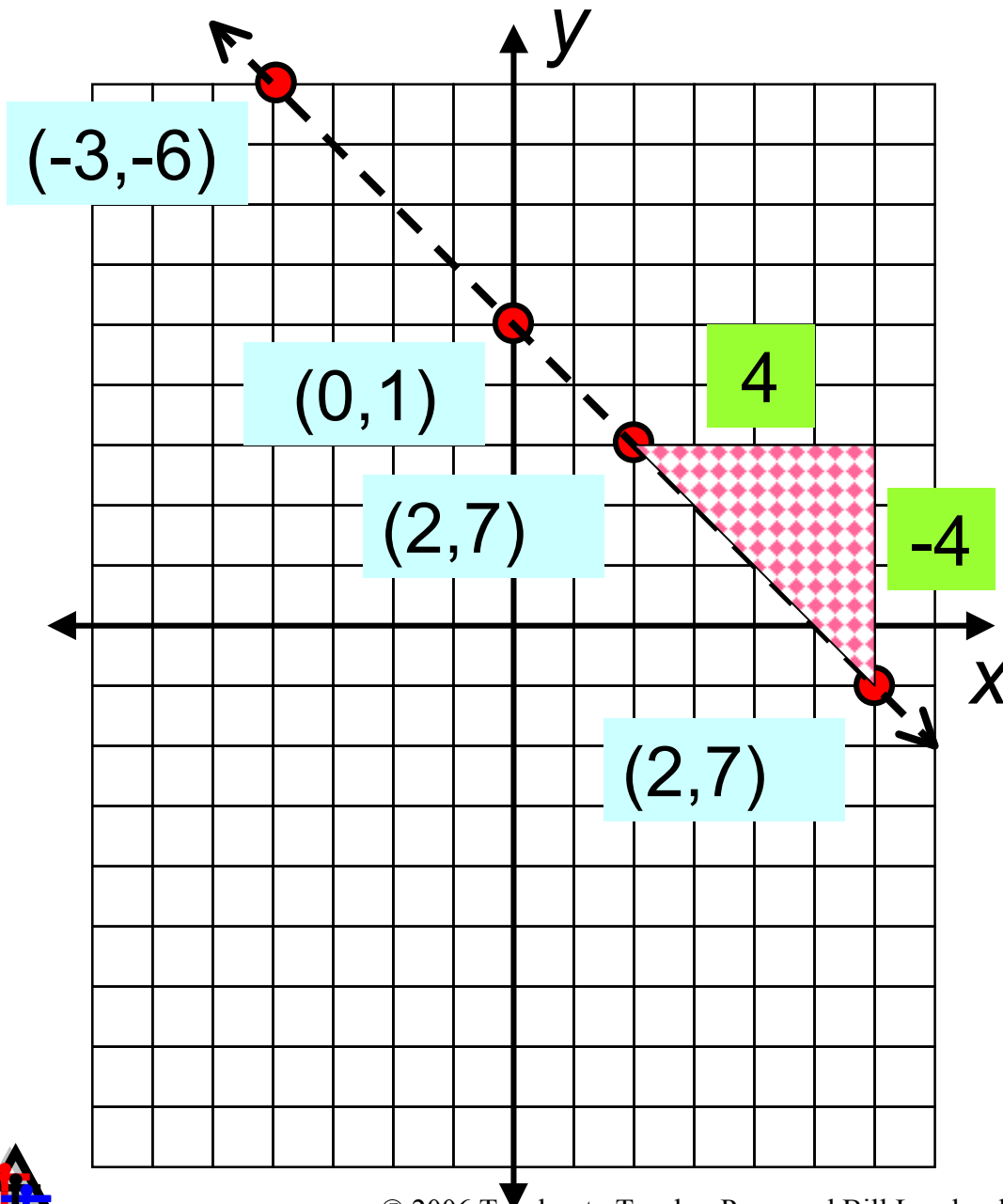
$$y = 5 - x$$





Function # 3
 $y = 5 - x$
linear





Slope Triangle

$$\text{slope} = \frac{-4}{4} = -1$$

Function # 3

$$y = 5 - x$$

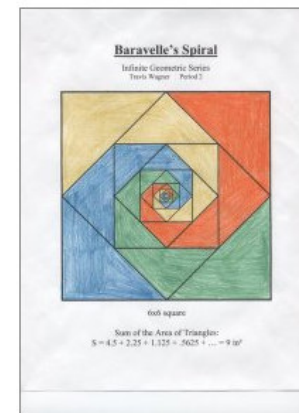
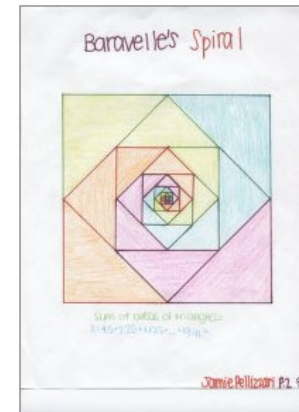
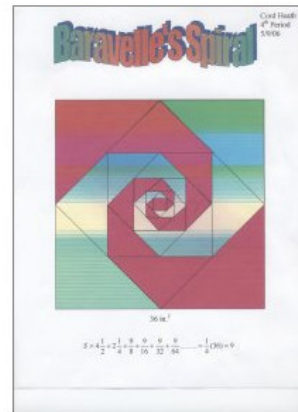
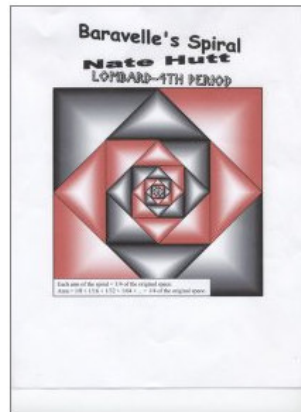
linear



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