

Worksheet on Lines

Name: _____

Identify the Independent and Dependent Variables in each Scenario.

1. James wants to determine the effect of fertilizer on the growth of grass.

Independent: _____ Dependent: _____

2. Alexa want to determine if salinity has an effect on his goldfish.

Independent: _____ Dependent: _____

3. Max want to know the effect of studying an extra 10 minutes each day on his Math grade.

Independent: _____ Dependent: _____

4. Shelly wants to determine the effect of pesticides on the size of the apples in the orchard.

Independent: _____ Dependent: _____

5. Billy wants to know if increasing his exercise will decrease the time it takes him to run a kilometer.

Independent: _____ Dependent: _____

6. Lucas wants to know if the quantity of detergent has an effect on the cleanliness of his clothes.

Independent: _____ Dependent: _____

7. Nathan wants to know if the cost of his cupcakes has an effect on the rate at which he sells them.

Independent: _____ Dependent: _____

8. The relationship between the number of students and the amount of pizza that will be required to feed them.

Independent: _____ Dependent: _____

Part II

Word problems with lines:

1) A baseball card is worth 2\$ today. Each year it will increase in value by 3\$.

a) Independent: _____

Dependent: _____

b) Table:

x (independent)	0	1	2	3	4	
y (dependent)						

c) Rule:

$$y = (\text{rate})(x) + (\text{initial value})$$

$$\text{rate} = \frac{\text{change in } y}{\text{change in } x}$$

=

$$\text{rate} =$$

initial value = the y value when x is zero

initial value =

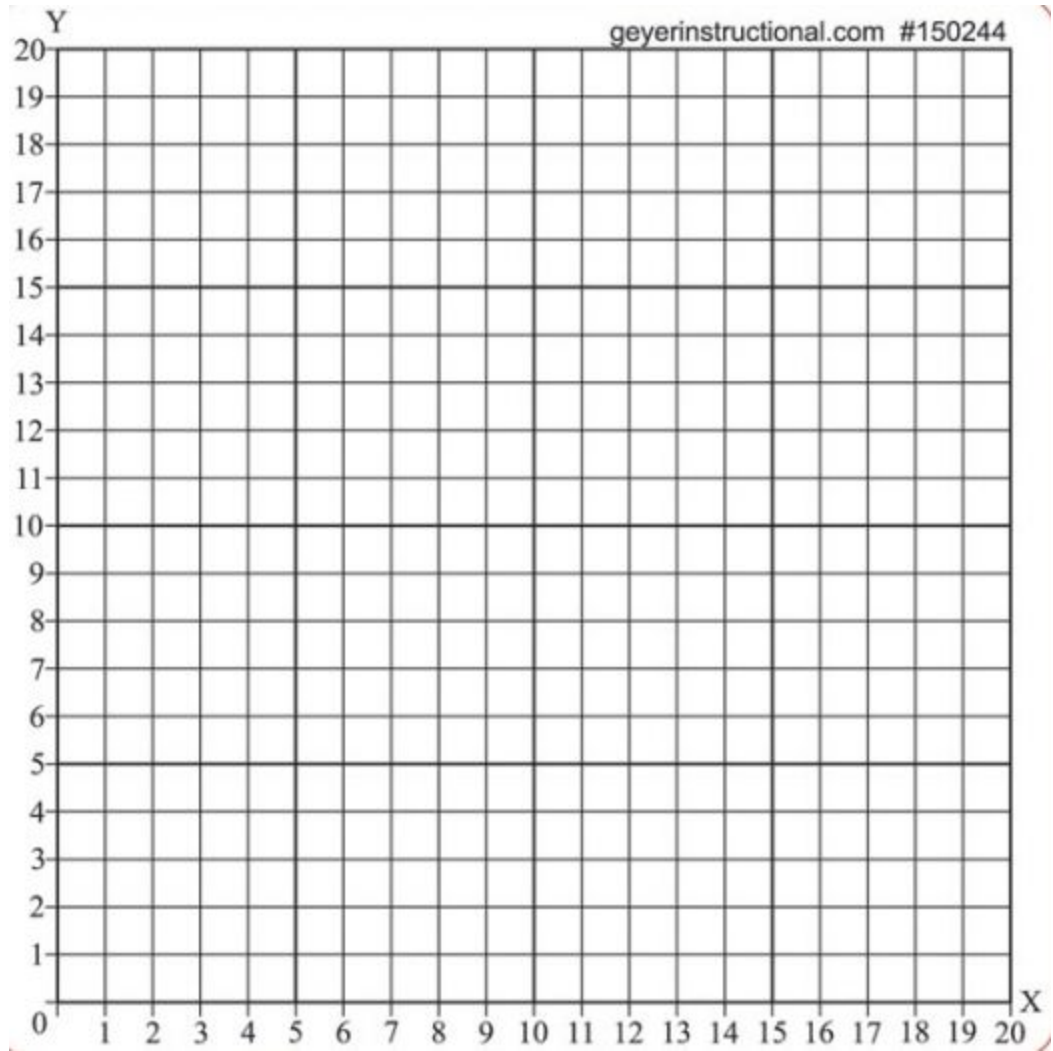
Rule : _____

Using the rule:

d) How much will it be worth in 25 years?

e) When will it be worth \$329?

f) Graph :



2) Emily is tracking the progress of her plant's growth. Today the plant is 5 cm high. The plant grows 0.5 cm per day.

a) Independent: _____
Dependent: _____

b) Table:

x (independent)	0	1	2	3	4	
y (dependent)						

c) Rule:

$$y = (\text{rate})(x) + (\text{initial value})$$

$$\text{rate} = \frac{\text{change in } y}{\text{change in } x}$$

=

=

$$\text{rate} =$$

initial value = the y value when x is zero

initial value =

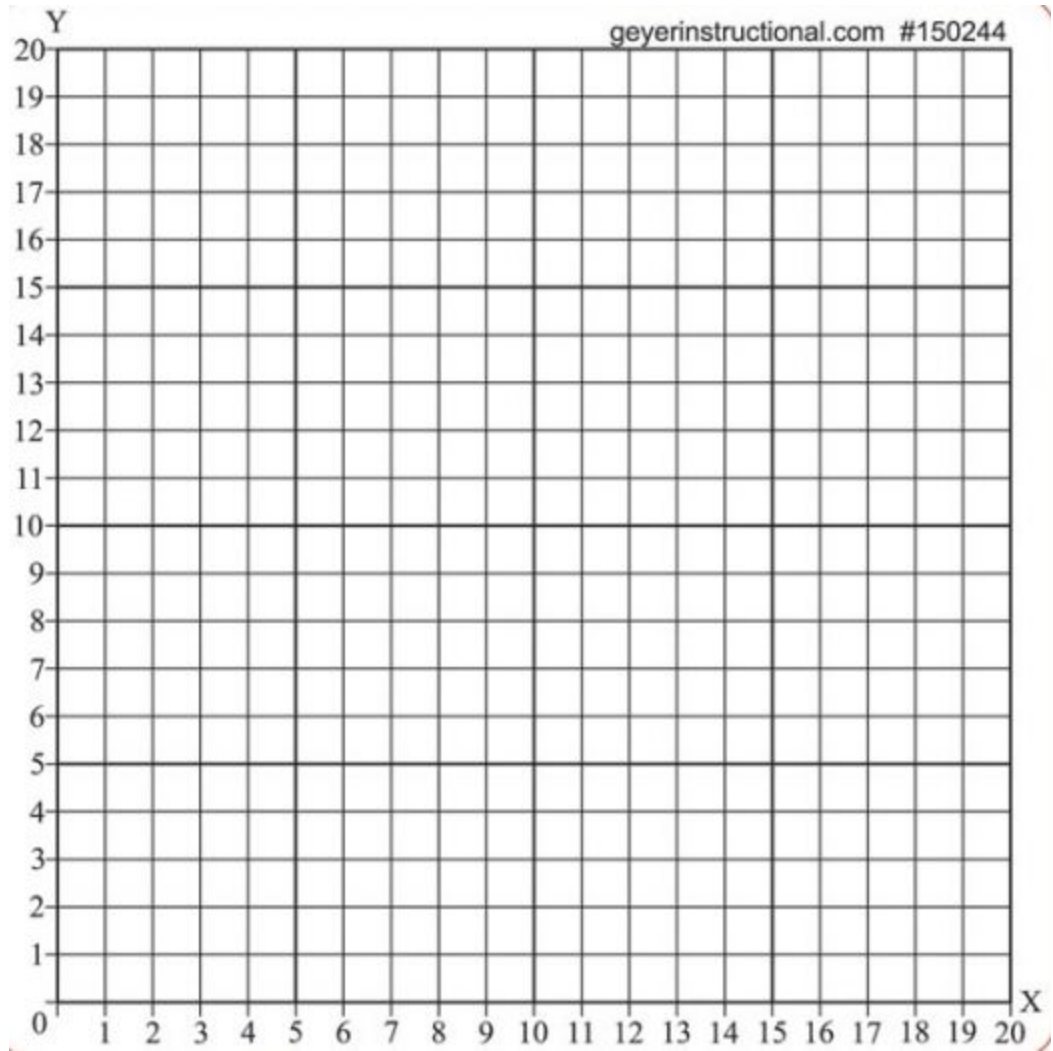
Rule : _____

Using the rule:

d) How tall will it be in 15 days?

e) When will it be 37 cm tall?

f) Graph :



3) Mr. Clause is on a diet. He currently weighs 240 pounds. He loses 2 pounds per week.

a) Independent: _____
Dependent: _____

b) Table:

x (independent)	0	5	10	15	20	
y (dependent)						

c) Rule:

$$y = (\text{rate})(x) + (\text{initial value})$$

$$\text{rate} = \frac{\text{change in } y}{\text{change in } x}$$

=

=

$$\text{rate} =$$

initial value = the y value when x is zero

initial value =

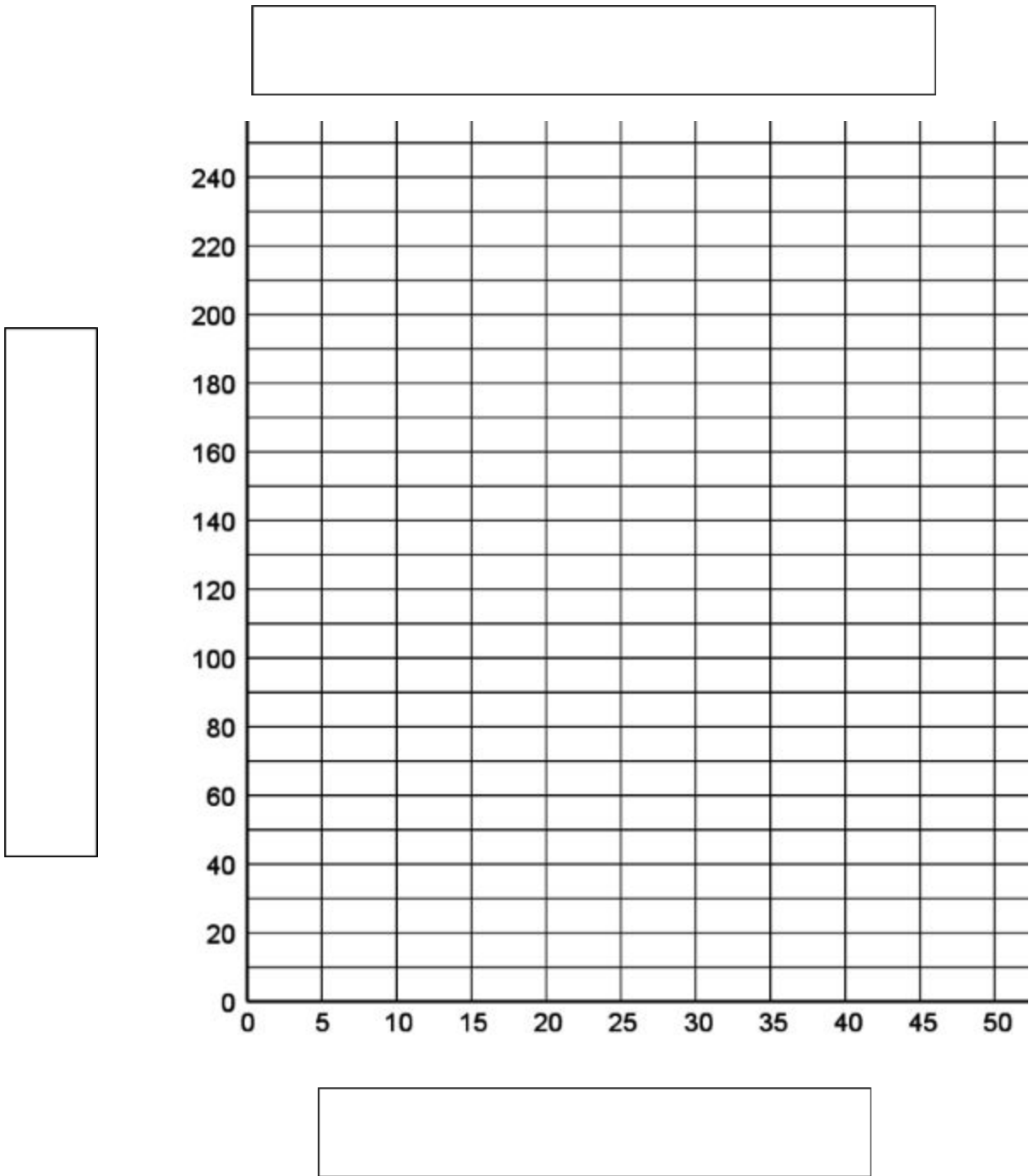
Rule : _____

Using the rule:

d) How much will he weigh in 10 weeks?

e) When will he weigh 100 lbs(assuming he continues to lose weight at this rate)?

f) Graph :



4) The population of St Thomas High School today is 700 students. Every year the population increases by 15 people.

a) Independent: _____
Dependent: _____

b) Table:

x (independent)	0	2	4	6	8
y (dependent)					

c) Rule:

$$y = (\text{rate})(x) + (\text{initial value})$$

$$\text{rate} = \frac{\text{change in } y}{\text{change in } x}$$

=

=

$$\text{rate} =$$

initial value = the y value when x is zero

initial value =

Rule : _____

Using the rule:

d) What will the population of St Thomas be in 20 years?

e) When will there be more than 1000 students?

5) Ryan opens a savings account with \$15. He saves \$10 per month. Assume that he does not withdraw money or make any additional deposits.

a) Independent: _____
Dependent: _____

b) Table:

x (independent)	0	2	4	6	8
y (dependent)					

c) Rule:

$$y = (\text{rate})(x) + (\text{initial value})$$

$$\text{rate} = \frac{\text{change in } y}{\text{change in } x}$$

=

=

$$\text{rate} =$$

initial value = the y value when x is zero

initial value =

Rule : _____

Using the rule:

d) How much money will he have in his account after 7 months?

e) He wants to buy a nintendo switch for \$300. When will he have enough money?

6) Emma has a monthly cell phone plan that costs \$30 for unlimited calling plus \$0.15 per sent text message.

a) Independent: _____
Dependent: _____

b) Table:

x (independent)	0	10	20	30	40
y (dependent)					

c) Rule:

$$y = (\text{rate})(x) + (\text{initial value})$$

$$\text{rate} = \frac{\text{change in } y}{\text{change in } x}$$

=

=

$$\text{rate} =$$

initial value = the y value when x is zero

initial value =

Rule : _____

Using the rule:

d) How much will her monthly bill be if she sends 20 text messages?

e) If her bill is \$46.50, how many text messages did she send?