Unit 2 – Linear Relations

Chapter 5 – Modeling With Graphs
Workbook

MPM1D
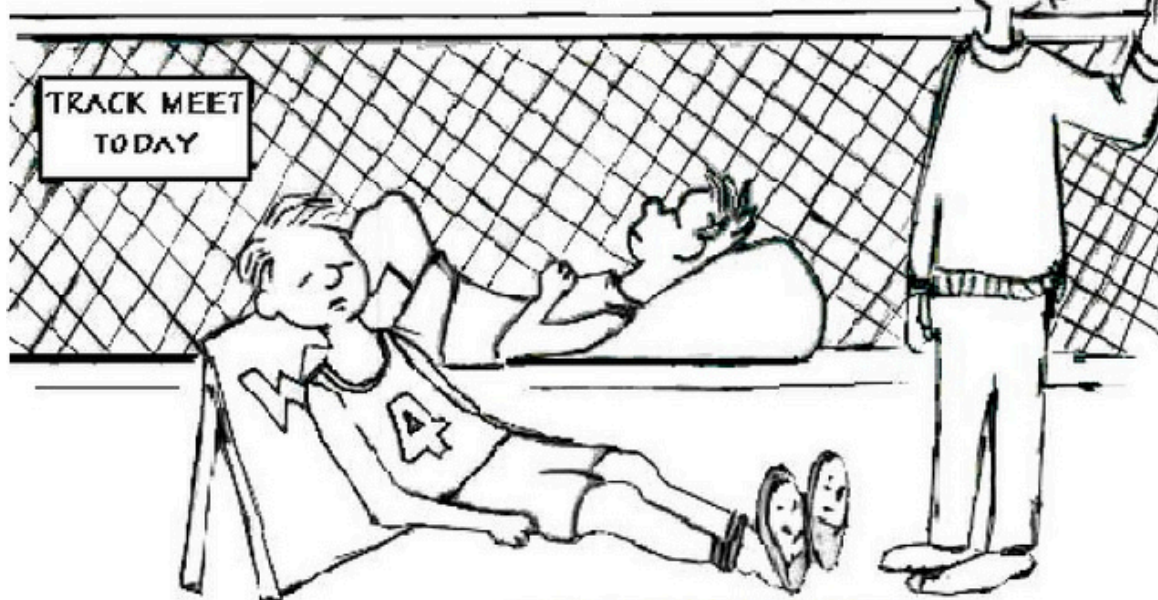
Chapter 5 Worksheet Checklist

Worksheet	Check ✓
5.1 – Direct Variation Worksheet	
5.2 – Partial Variation Worksheet	
5.3 – Finding Slope From a Graph (Kuta software)	
5.3 – Slope Worksheet #2	
5.3 – Slope Worksheet #3	
5.3 – Slope Worksheet #4	
5.4 – Slope as a Rate of Change Worksheet	
5.5 – First Differences Worksheet	
5.6 Worksheet – Connecting Variation, Slope, and First Differences	
Finding Slope Extra Practice (optional)	
Chapter 5 Review	

Mark /10	0-2	3-5	6-8	9-10
Work completion for chapter 5	Little to know homework done throughout chapter.	Some homework completed. Unorganized.	Most homework completed. Work clear and organized.	All homework completed accurately. Great organization of work.

Mark /4	1	2	3	4
In Class Work for Chapter 5	Class time not used well for work completion. Inattentive during lessons. Need to improve at limiting distractions.	Some work completed during class. Sometimes distracted during lessons.	Works well during class. Minimal distractions. Good attention during lessons.	Always uses class time efficiently. Pays attention and contributes to lessons.

Comments:

$$\frac{}{14}$$

5.1 Direct Variation Worksheet
MPM1D
Jensen

1. Determine the constant of variation for each direct variation. $\qquad m = \frac{\Delta dependent}{\Delta independent}$

a) The distance travelled by a bus varies directly with time. The bus travels 240 km in 3 hours.

b) The total cost varies directly with the number of books bought. Five books cost $35.

c) The volume of water varies directly with time. A swimming pool contains 500 L of water after 5 minutes.

2. The cost, C, in dollars, of building a concrete sidewalk varies directly with its length, s, in meters.

a) Find an equation relating C and s if a 200-m sidewalk costs $4500.

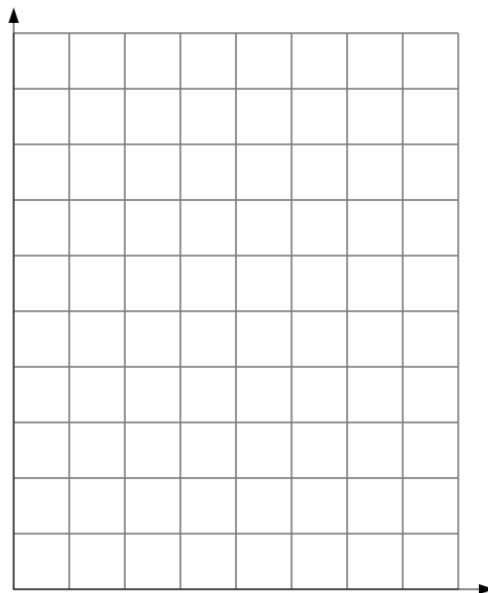b) What does the constant of variation represent?

c) Use the equation to determine the cost of a 700-m sidewalk.

3. Passent's pay varies directly with the time, in hours, she works. She earns $8/h.

a) Complete the following table of values

Hours Worked	Pay
0	
1	
2	
3	

b) Graph the relation. Choose an appropriate scale and label your axes.

c) Write an equation in the form $y = mx$.

4. The total cost of apples varies directly with the mass, in kilograms, bought. Apples cost $1.50/ kg.

a) Complete the following table of values:

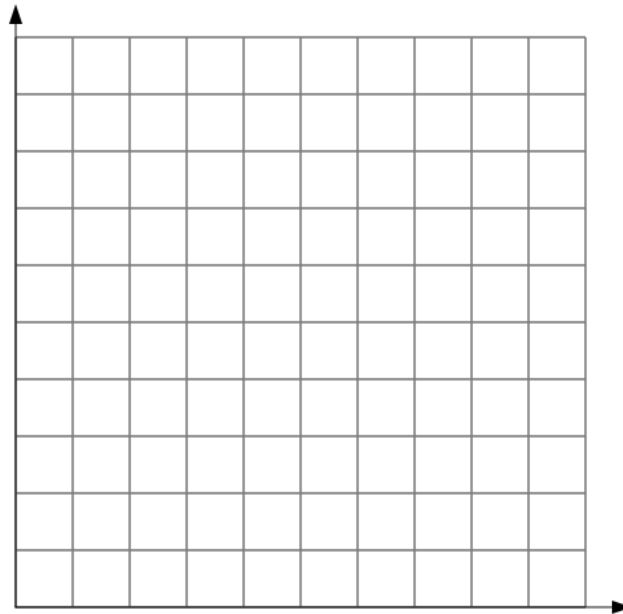| Mass (kg)	Cost ($)
0	
1	
2	
3	

b) Graph the relation. Choose an appropriate scale and label the axes.
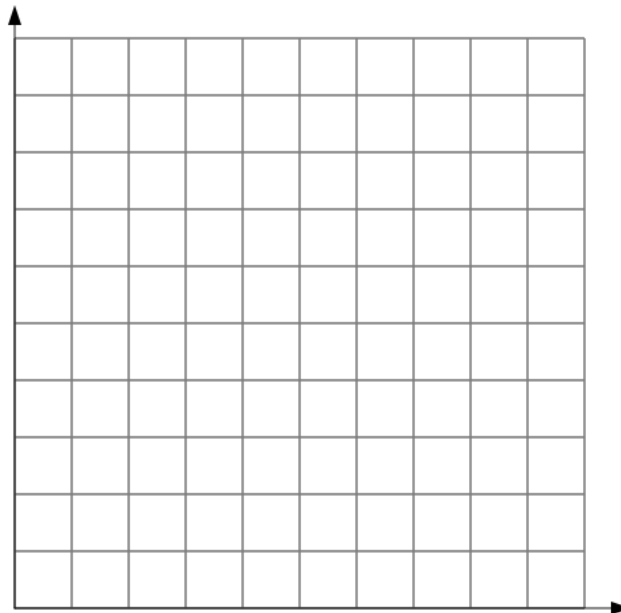
c) Write an equation in the form $y = mx$

5. A parking garage charges $2.75/h for parking.

a) Describe the relationship between the cost of parking and the time, in hours, parked.

b) Illustrate the relationship graphically and represent it with an equation.

Equation: _____

c) Use your graph to estimate the cost of 7 hours of parking.

d) Use your equation to determine the exact cost for 7 hours of parking.

6. The cost of oranges varies directly with the total mass bought. 2 kg of oranges costs $4.50.

a) Describe the relationship in words.

b) Write an equation relating the cost and the mass of oranges. What does the constant of variation represent?

c) What is the cost of 30 kg of oranges?

7. The volume of water in a swimming pool varies directly with time. 500 L of water is in the pool after 4 minutes.

a) Write an equation relating the volume of water and time. What does the constant of variation represent?

b) Graph this relationship. Choose an appropriate scale and label your axes.
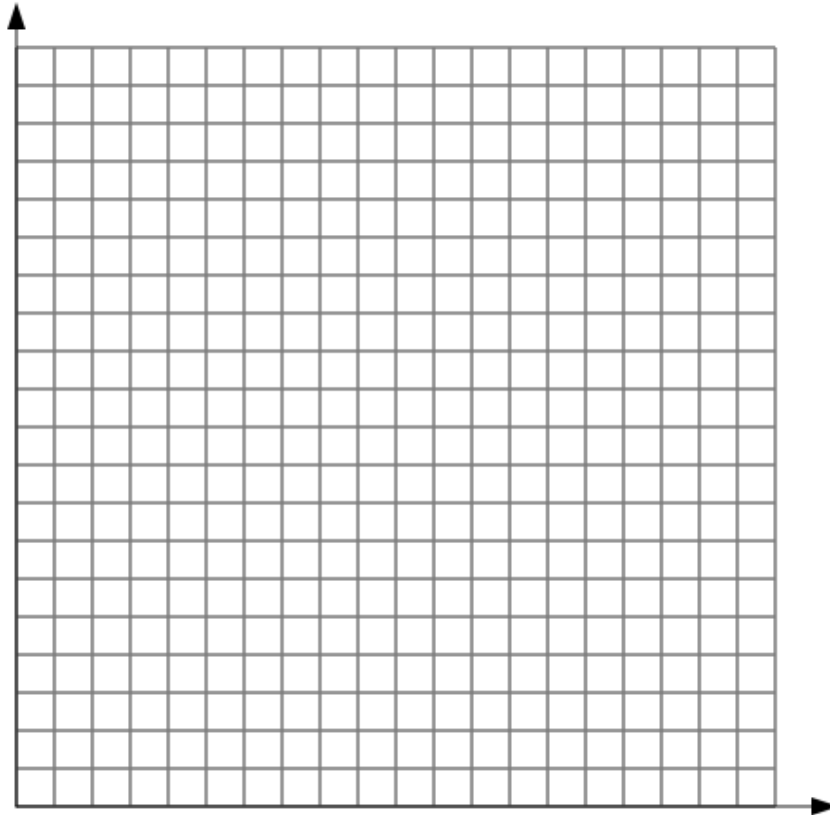
c) What volume of water is in the swimming pool after 20 minutes?

d) How long will it take to fill a swimming pool that holds 115 000 L of water?

e) Describe the changes to the equation and graph if only 400 L of water is in the pool after 4 minutes.

8. [BONUS] From a bag of disks numbered 1 through 100, one disk is chosen. What is the probability that the number on the disk contains a 3? Justify your answer.

Answers

1. a) 80   **b)** 7   **c)** 100
2. a) $C = 22.5s$ **b)** the cost of 1 m of sidewalk   **c)** $15 750
3. a)

Time, t (h)	Pay, p ($)
0	0
1	8
2	16
3	24

b) Graphs may vary depending on scales used.
c) $p = 8t$
4. a)

Mass of Apples, a (kg)	Cost, c ($)
0	0.00
1	1.50
2	3.00
3	4.50

b) Graphs may vary depending on scales used.
c) $c = 1.5a$
5. a) To get the cost of parking, multiply the time parked, in hours, by $2.75. The cost c, in dollars, of parking, varies directly with the time, t, in hours, for which the car is parked.
b) $c = 2.75t$
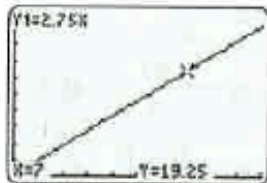
c) Answers will vary. Example: about $20
d) $19.25
6. a) To get the cost C, of oranges, multiply the mass r, in kilograms, of oranges, by $2.25.
b) $C = 2.25r$; the constant of variation represents the constant average cost, $2.25/kg.
c) $67.50

7.

a) $V = 125t$, where V is the volume of the water, in litres, and t is the time, in minutes. The constant of variation represents the constant average increase in volume, 125 L/min.
b)
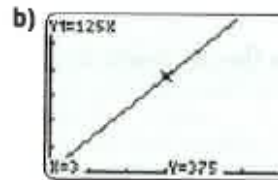
c) 2500 L   **d)** 920 min or 15 h 20 min
e) New equation: $V = 100t$. The graph would still increase to the right, but less steeply. It would take longer to fill the pool.

5.2 Partial Variation Worksheet
MPM1D
Jensen

1. Identify each relation as a direct variation, a partial variation or neither.

a) $y = 3x$

b) $y = 2x + 1$
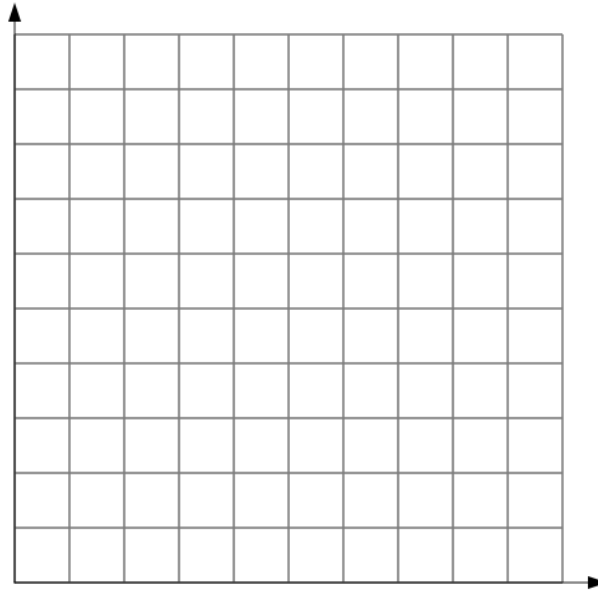
c) $C = 20n + 500$

d) $d = 5t$

2. a) Complete the table of values given that y varies partially with x.

x	y
0	5
1	10
2	
3	20
4	
	40

b) Identify the initial value of y and the constant of variation from the table.

c) Write an equation relating y and x in the form $y = mx + b$.

d) Graph the relation. Choose an appropriate scale.

e) Describe the graph.

3. a) Complete the table of values given that y varies partially with x.

b) Identify the initial value of y and the constant of variation from the table.

x	y
0	−2
1	3
2	
3	13
4	
	33

c) Write an equation relating y and x in the form $y = mx + b$

d) Graph the relation.
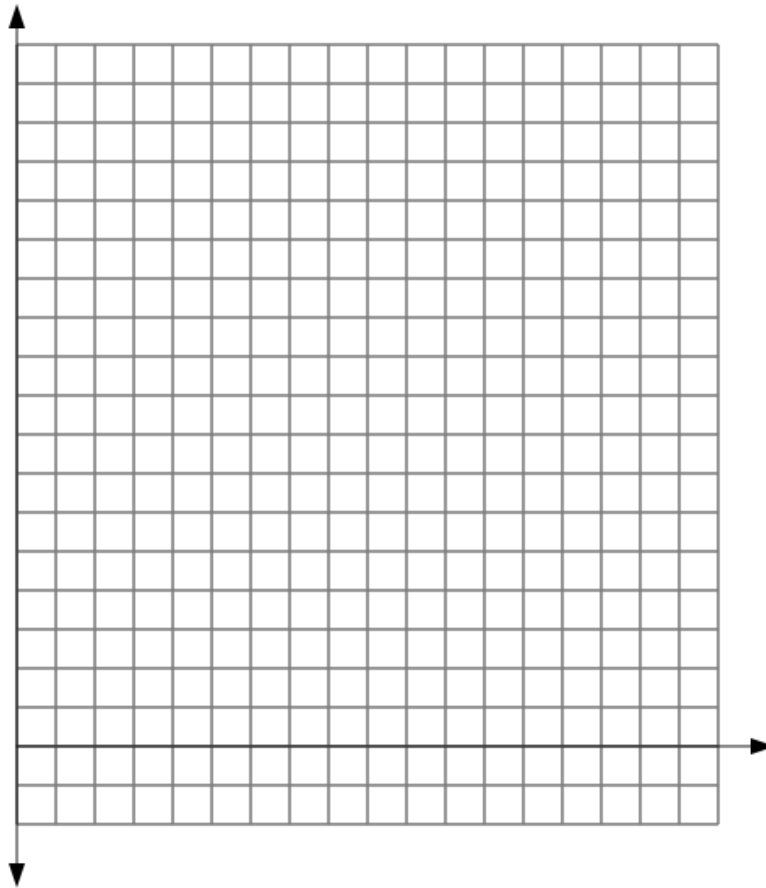
e) Describe the graph.

4. A small pizza costs $7.00 plus $1.50 per topping.

a) Identify the fixed cost and the variable cost of this partial variation.

b) Determine the equation relating the cost, C, in dollars, and the number of toppings, n.

c) Use the equation to determine the cost of a small pizza with five toppings.

5. A class is planning a field trip to an art gallery. The cost of renting a bus is $250. There is an additional cost of $4 per student for the entrance fee.

a) Identify the fixed cost and the variable cost of this partial variation.

b) Write an equation relating the cost, C, in dollars, and the number of students, n.

c) Use your equation to determine the total cost if 25 students attend.

6. A fitness club offers two types of monthly memberships:

      Membership A: $4 per visit
      Membership B: A flat fee of $12 plus $2 per visit

a) Graph both relations for 0 to 10 visits.
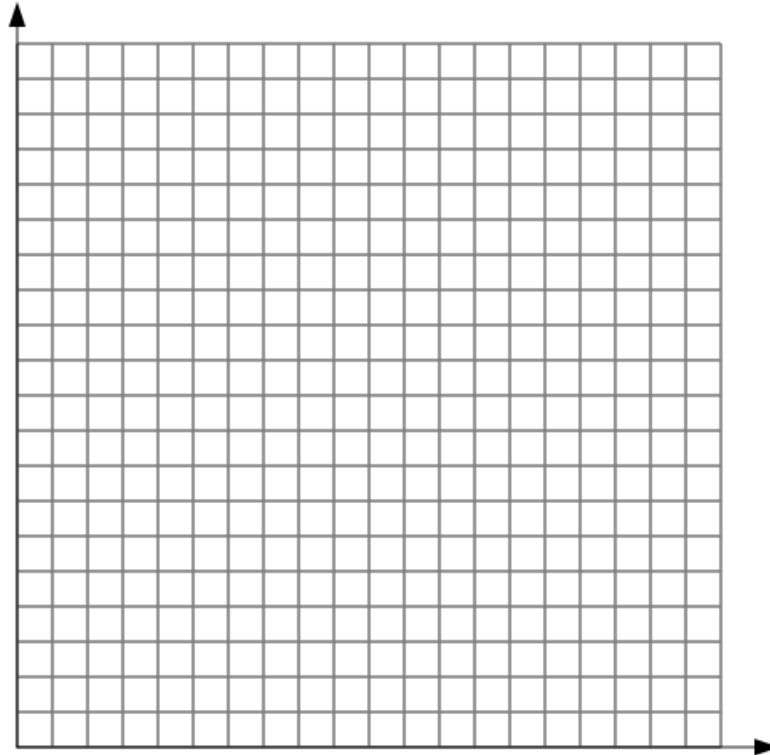
b) Classify each relation as a direct variation or a partial variation.

c) Write an equation relating the cost and the number of visits for each membership.

d) Compare the monthly membership costs. When is membership A cheaper than membership B? When is membership B cheaper than membership A?

7. The table shows the amount a printing company charges for advertising flyers.

Number of Flyers, n	Cost, C ($)
0	100
100	120
200	140
300	160

a) Identify the fixed cost this company charges for producing the flyers. What do you think this amount might represent?

b) Determine the variable cost for producing one flyer. Explain how you found this.

c) Write an equation representing the price for the flyers.

d) Write an equation representing the price for the flyers in the form $y = mx + b$.

e) How many flyers can be produced for $280?

8. At the surface of a lake, a scuba diver experiences 102.4 kPa of pressure. As the diver descends, the pressure increases by 101.3 kPa for every 10 m.

a) Write an equation that relates the pressure experienced by a diver and the depth that the diver has descended.

b) Divers must be aware of nitrogen narcosis, which occurs when too much nitrogen dissolves in the blood. Narcosis becomes possible when the diver is exposed to a pressure of about 400 kPa. At what depth does the danger from narcosis begin?

Answers

1. a) Direct variation: the equation is of the form $y = kx$.
   b) Partial variation: the equation is of the form $y = mx + b$.
   c) Partial variation: the equation is of the form $y = mx + b$.
   d) Direct variation: the equation is of the form $y = kx$.

2. a)

x	y
0	5
1	10
2	15
3	20
4	25
7	40

   b) 5, 5   **c)** $y = 5x + 5$

   d) Graphs may vary.
   e) The graph is a straight line that intersects the y-axis at (0, 5). The y-values increase by 5 as the x-values increase by 1.

3. a)

x	y
0	-2
1	3
2	8
3	13
4	18
7	33

   b) -2, 5   **c)** $y = 5x - 2$
   d) Graphs may vary.
   e) The graph is a straight line that intersects the y-axis at (0, -2). The y-values increase by 5 as the x-values increase by 1.

4. a) $7.00, $1.50 × number of toppings
   b) $C = 1.50n + 7.00$ **c)** $14.50

5. a) $250, $4 × number of students
   b) $C = 4n + 250$ **c)** $350

6. a)

Cost of Membership — graph showing Membership A and Membership B, Cost ($) vs Number of Visits.
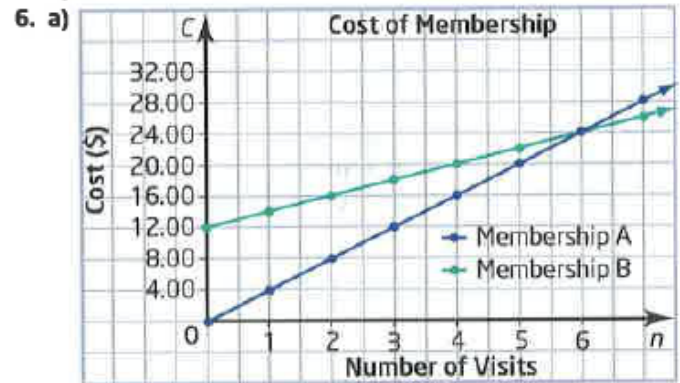
   b) A: direct variation; B: partial variation
   c) In both cases, C represents the cost of membership and n represents the number of visits.
      A: $C = 4n$; B: $C = 2n + 12$
   d) Membership A is cheaper when fewer than six visits are made. Membership B is cheaper when more than six visits are made. They cost the same when six visits are made.

7. a) The fixed cost is $100 and could represent, for example, the cost of paper, ink, and overhead.
   b) From the table, it costs $20 to print 100 flyers, so the variable cost to print one flyer is $20 ÷ 100 or $0.20.
   c) $C = 0.2n + 100$
   d) $300   **e)** 900 flyers

8.
   a) $P = 10.13d + 102.4$, where P is the pressure, in kilopascals, and d is the depth below the lake's surface, in metres.

Name_____

Finding Slope From a Graph

Date_____ Period____

Find the slope of each line.

1)
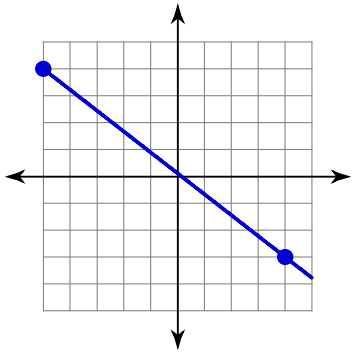
2)
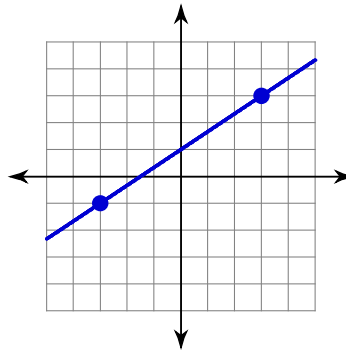
3)
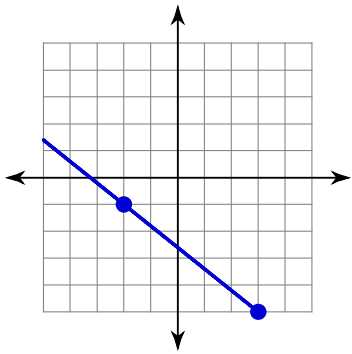
4)
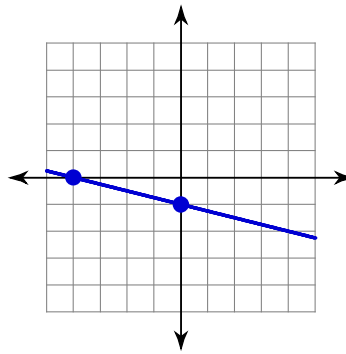
5)
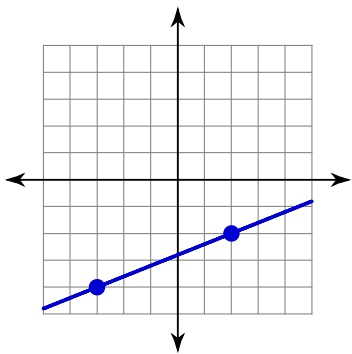
6)
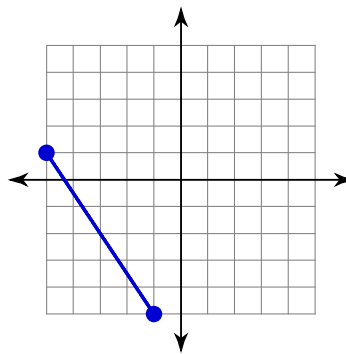
7)
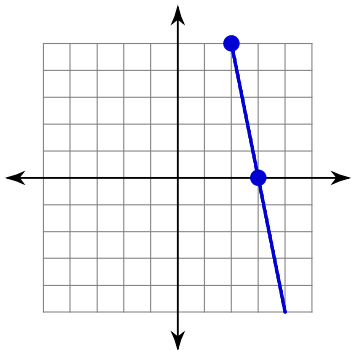
8)
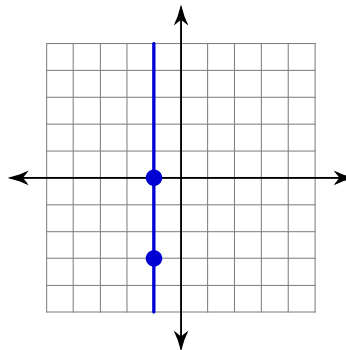
9)
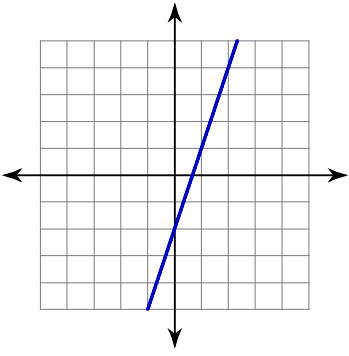
10)
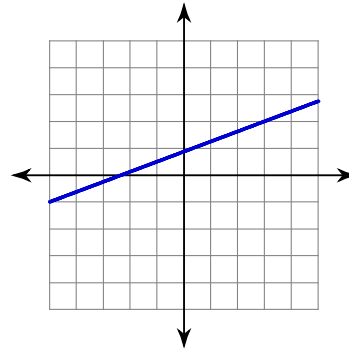
11)
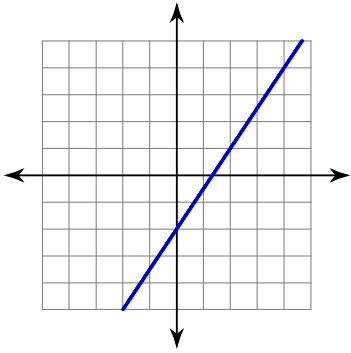
12)
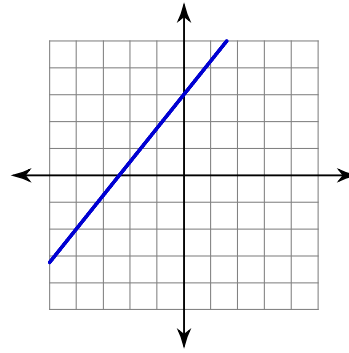
13)
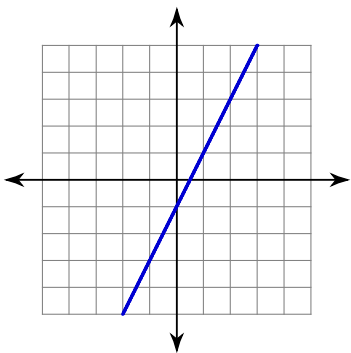
14)
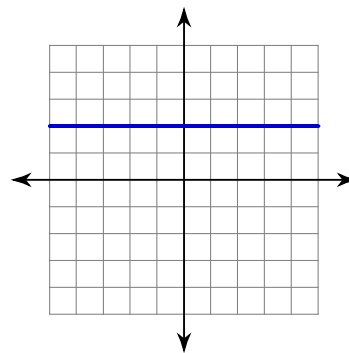
15)
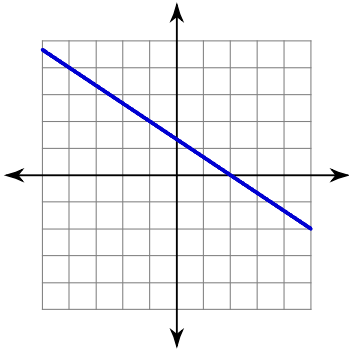
16)
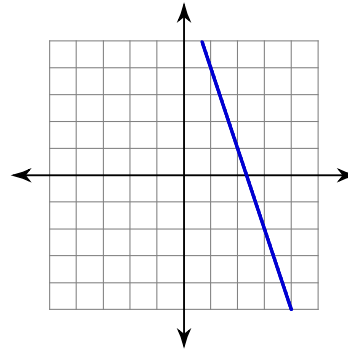
5.3 Slope Worksheet #2

1. Find the slope of each object.

a)

2 m

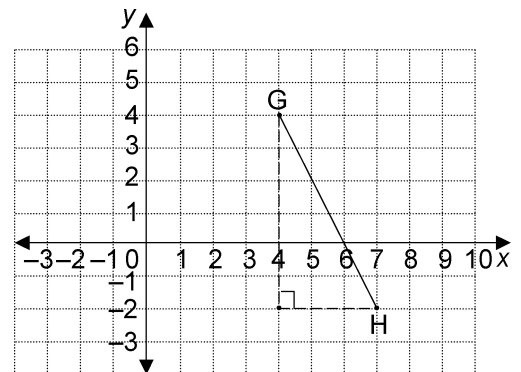5 m

b)

1.2 m

2.5 m
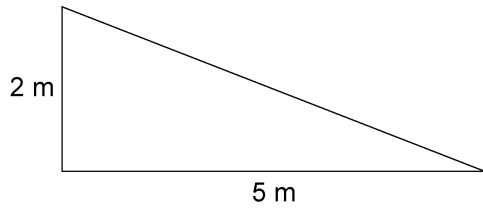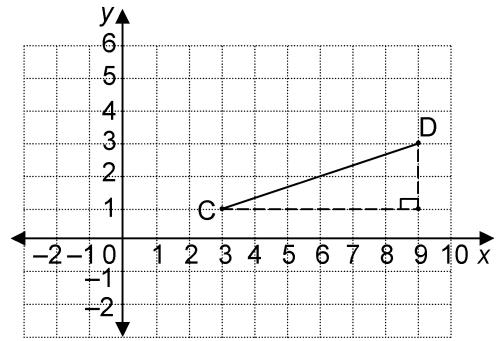
b)
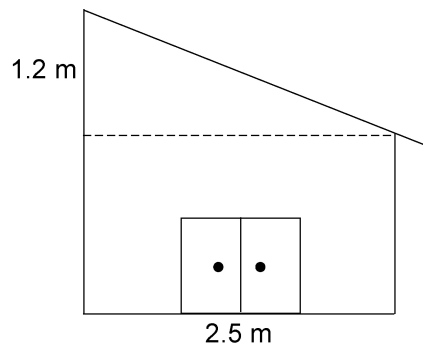
c)
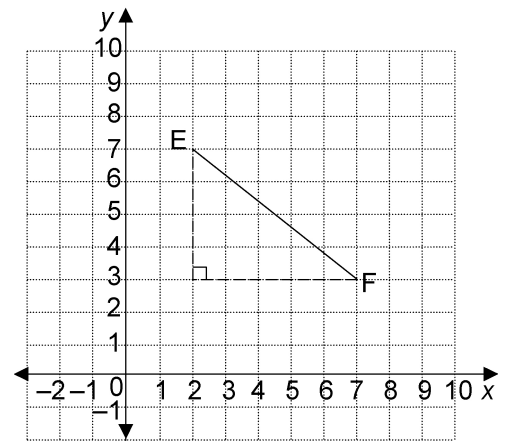
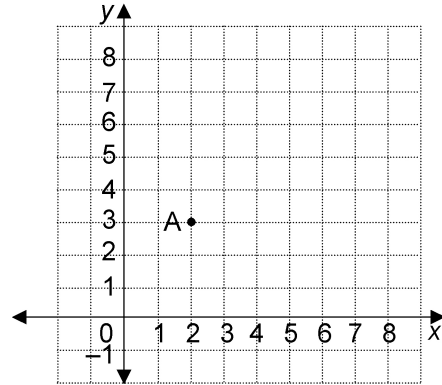**2.** Find the slope of each line segment.

a)
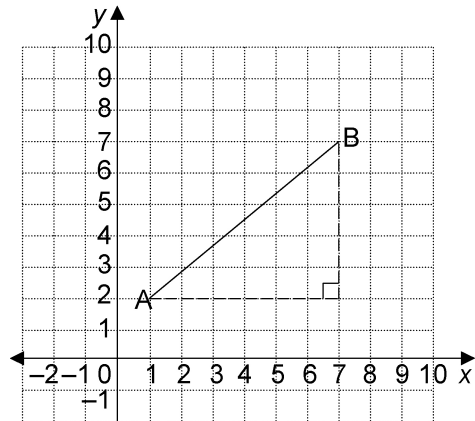
d)

3. For safety, the slope of a staircase must be greater than 0.58 and less than 0.70. A staircase has a vertical rise of 2.4 m over a horizontal run of 3.5 m.
   a) Find the slope of the staircase.

   b) Is the staircase safe?

4. Find the slope of each line segment.

   a) AB

   b) CD

   c) EF

   d) GH

5. Point A (2, 3) is plotted on the grid. Draw a line segment AB with slope $-\dfrac{1}{2}$. What are possible coordinates of B?
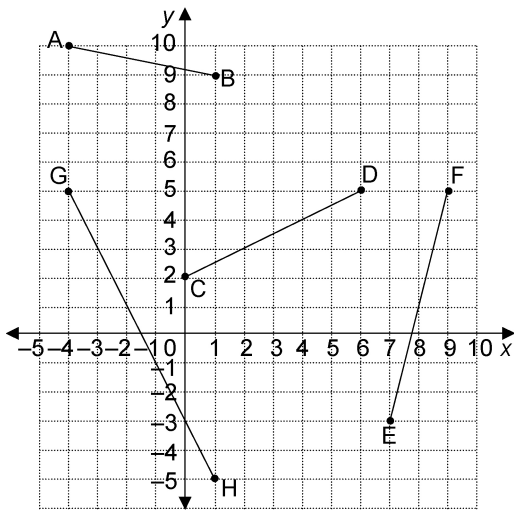
Answers
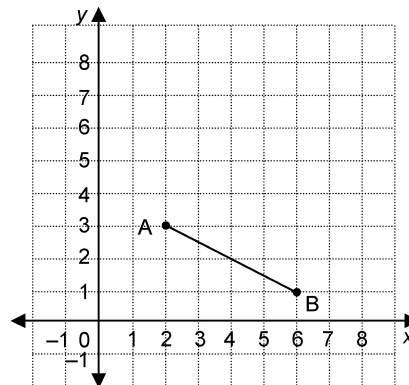
1. **a)** $-\dfrac{2}{5}$ **b)** −0.48

2. **a)** $\dfrac{5}{6}$ **b)** $\dfrac{1}{3}$ **c)** $-\dfrac{4}{5}$ **d)** −2

3. **a)** 0.69   **b)** Yes

4. **a)** $-\dfrac{1}{5}$ **b)** $\dfrac{1}{2}$ **c)** 4   **d)** −2

5. Answer may vary. Possible answer: B(6, 1)

1. Determine the slope of each object.

a)

3 m

5 m

b)

4.4 m

3.2 m
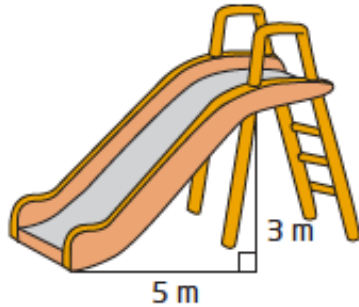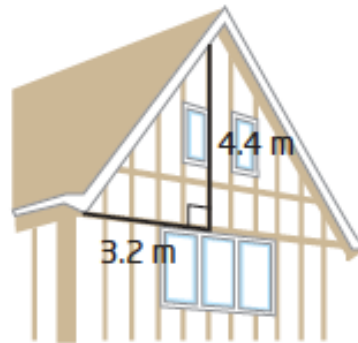
2. A section of road is built with a vertical rise of 2.5 m over a horizontal run of 152 m. Find the slope, to the nearest hundredth.

3. To be safe, a wheelchair ramp needs to have a slope no greater than 0.08. Does a wheelchair ramp with a vertical rise of 1.4 m along a horizontal run of 8 m satisfy the safety regulation.

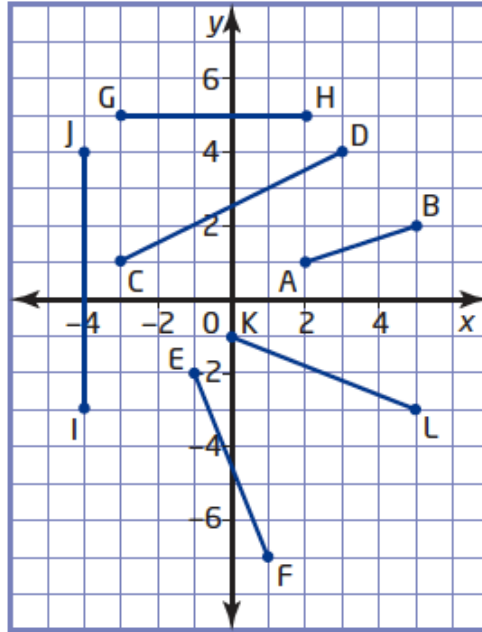**4.** Calculate the slope of each line segment, where possible.

a) AB: _____

b) CD: _____

c) EF: _____

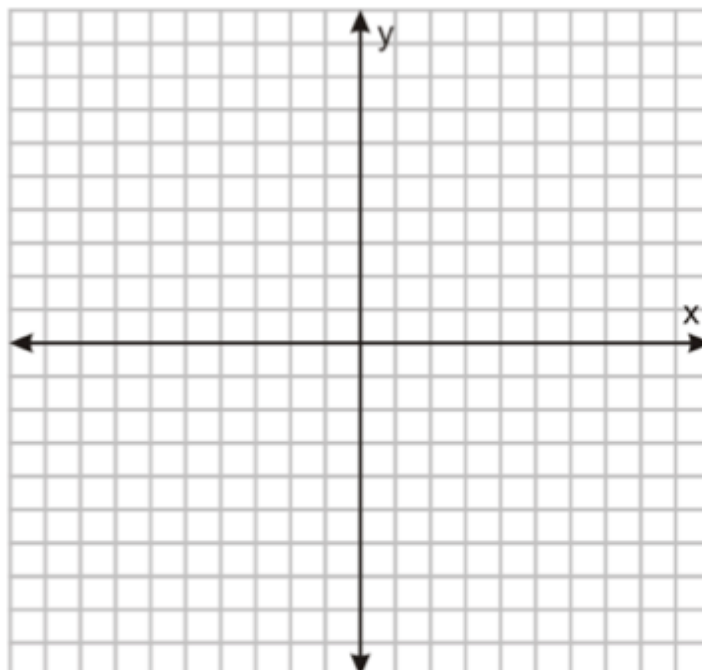d) GH: _____

e) IJ: _____

f) KL: _____

**5.** A line segment has one endpoint of A(3, 1).

    a) Plot the point A on the grid below.

    b) Use the slope $\frac{3}{2}$ to locate another possible endpoint
        What are the coordinates of B?

6. A line segment has one endpoint of A(6, -2) and slope of $\frac{-3}{4}$. Find the coordinates of another possible endpoint B by adding the appropriate values to the coordinates of point A.

7. For safety reasons, a staircase should have a slope between 0.58 and 0.70. Determine whether each staircase is within the safety range.

a)

5 m

6 m

b)

28 cm

24 cm
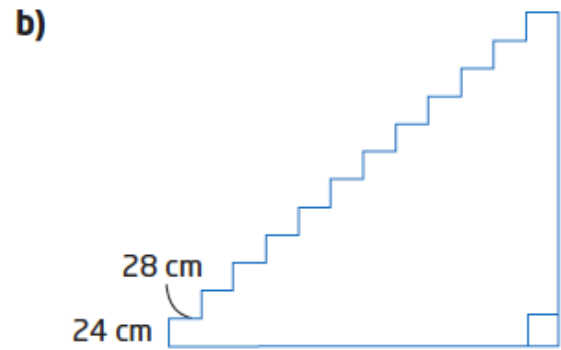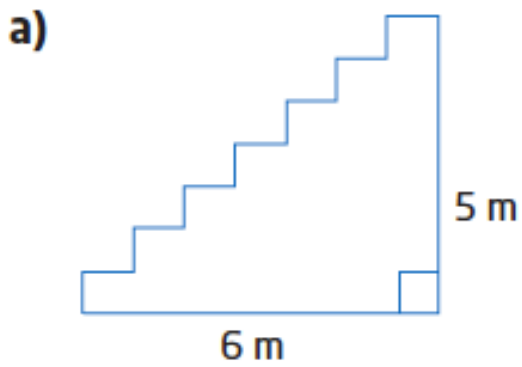
8. Given a point A(-2, 5), find the coordinates of a point B so that the line segment AB has each slope.
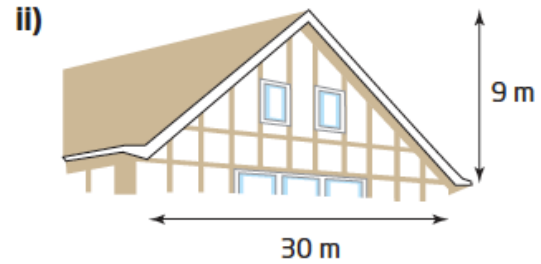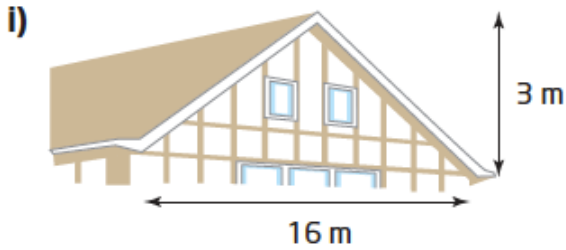
a) $\frac{2}{3}$

b) $\frac{-2}{3}$

c) 4

9. Roofers call the slope of a roof its pitch.
Roofs have different pitch classifications, which
Indicate how safe they are for roofers to walk on.
They are classified as shown in this table.

Classification	Pitch
Shallow	$m \leq \frac{3}{12}$
Medium	$\frac{3}{12} < m \leq \frac{6}{12}$
Steep	$m > \frac{6}{12}$

a) Classify each roof by its pitch.

i)

3 m

16 m

ii)

9 m

30 m

b) A roof is 10 m wide and has a pitch of $\frac{5}{12}$. Find the height.

10. A steel beam goes between the tops of two buildings that are 7 m apart. One building is 41 m tall. The other is 52 m tall. What is the slope of the beam?

Answers

1) a) 0.6 b) 1.375

2) 0.02

3) no

4) a) $\frac{1}{3}$ b) 0.5 c) -2.5 d) 0 e) undefined f) -0.4

5) a) b) Answers will vary. For example, B(5, 4).

6) Answers will vary. For example, B(10, -5)

7) a) no b) no

8) Answers will vary. Examples: a) (1, 7) b) (1, 3) c) (-1, 9)

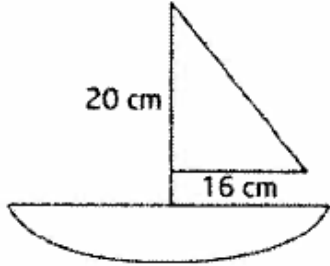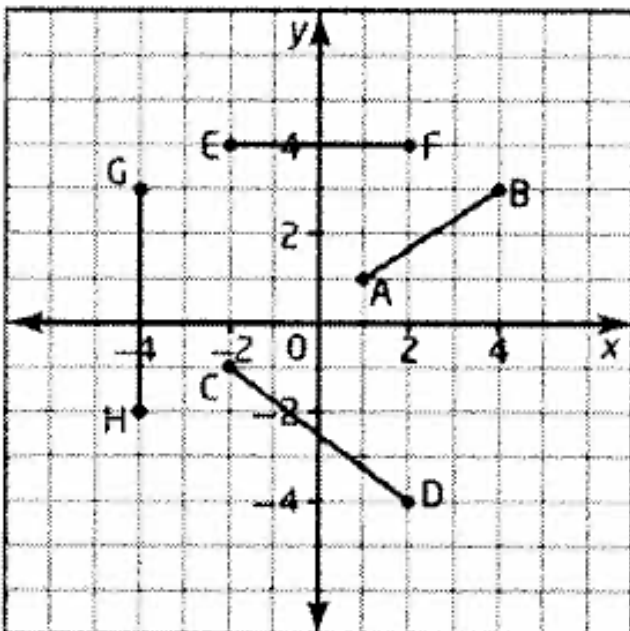9) a) i) medium ii) steep   b) 2.1 m, to the nearest tenth

10) 1.6, to the nearest tenth

1. Find the slope of the sail on the toy sailboat

2. A set of stairs is to be built so that each step has a vertical rise of 20 cm over a horizontal run of 27.5 cm. Find the slope, to the nearest hundredth.

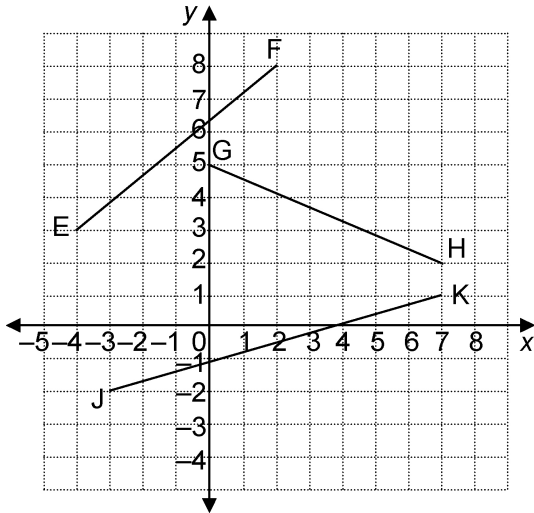3. Find the slope of each line

AB: _____

CD: _____

EF: _____
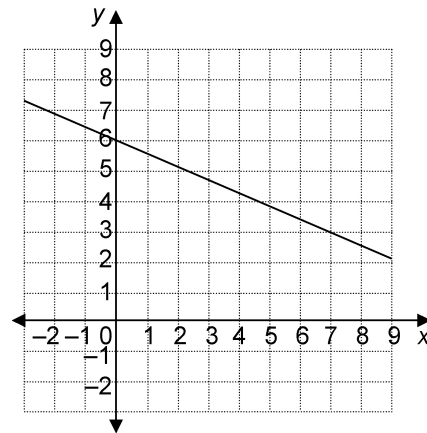
GH: _____
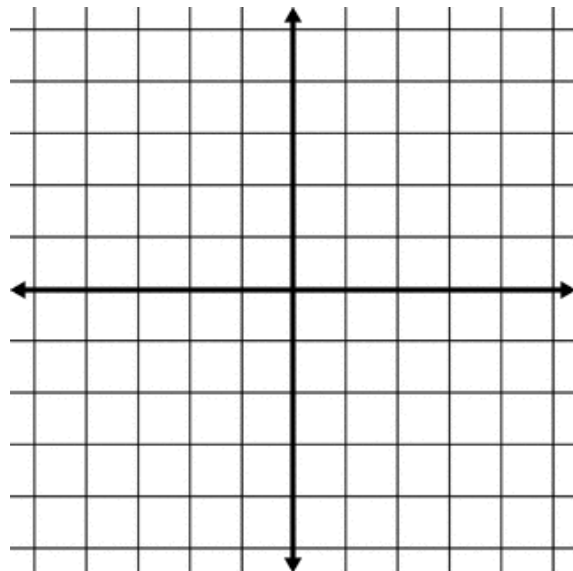
4. Find the slope of each line

EF: _____

GH: _____

JK: _____

5. Find the slope of the following line:

6. A line segment has one endpoint of A(-3,2) and a slope of $\frac{-1}{2}$. Find the coordinates of a point to left and to the right of A. Use the graph to help and then record the new coordinates in the table of values.

x	y
-3	2

7. A line segment has one endpoint of A(2,1) and a slope of $\frac{2}{3}$. Find the coordinates of a point to left and to the right of A. Use the graph to help and then record the new coordinates in the table of values.
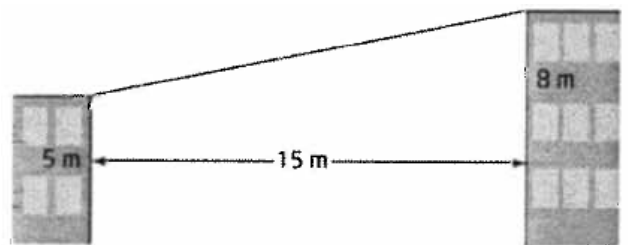
x	y
2	1
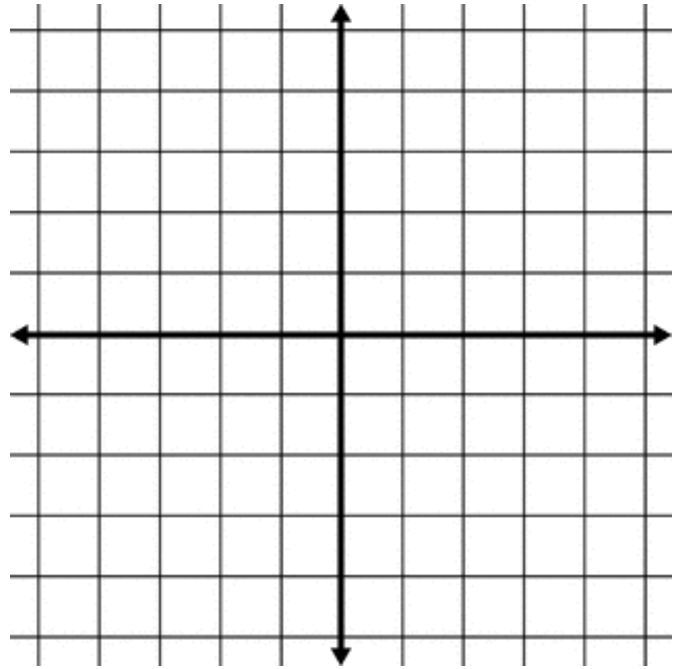
8. A steel wire goes between the tops of two walls that are 15 meters apart. One wall is 8 meters high. The other is 5 m high. What is the slope of the steel wire?

9. A ladder is leaning up against a wall of a building so that it reaches 10 m up the wall. The bottom of the ladder is 1.25 m from the base of the wall.

a) What is the slope of the ladder?

b) Has the ladder been placed according to the safety standards, which state that the ladder should have a slope of between 6.3 and 9.5 when it is placed up against a building?

Answers

1) -1.25

2) 0.73
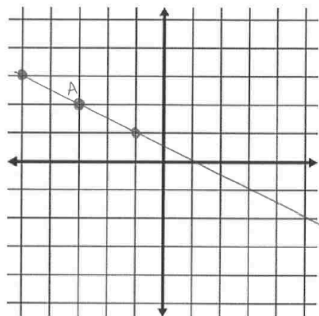
3) AB=$\frac{2}{3}$ CD=$\frac{-3}{4}$ EF=0   GH=undefined

4) EF=$\frac{5}{6}$ GH=$\frac{-3}{7}$ JK=$\frac{3}{10}$

5) $\frac{-3}{7}$

6)

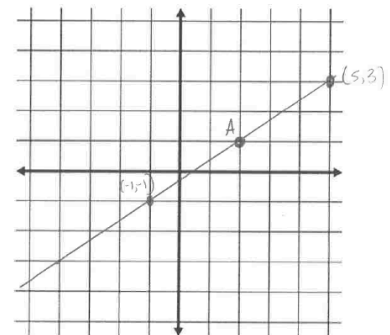| x	y
-1	1
-3	2
-5	3

7)

x	y
-1	-1
2	1
5	3

8) 0.2

9) a) 8   b) yes

1. The average adult breathes in about 37 L of air every 5 minutes. What is the rate of change of volume of air?

2. A teenager's heart pumps an average of 7200 L of blood every 24 hours. What is the rate of change of volume of blood?

3. A hummingbird can flap its wings an average of 1800 times every 30 seconds. What is the rate of change of wing flaps?

4. The graph shows the height above the ground of a rock climber over time.

a) Calculate the slope of the graph.
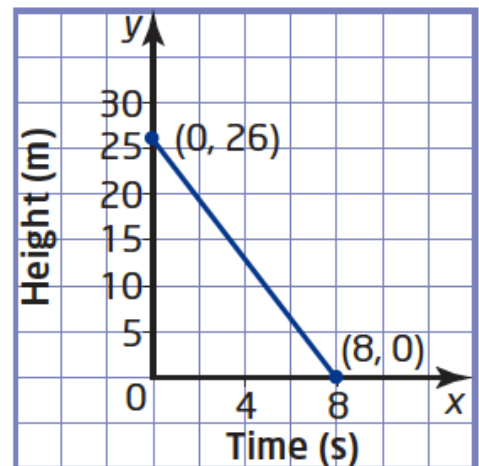
b) Interpret the slope as a rate of change.

5. The graph shows the relationship between temperature and altitude.

a) Calculate the slope of the graph.
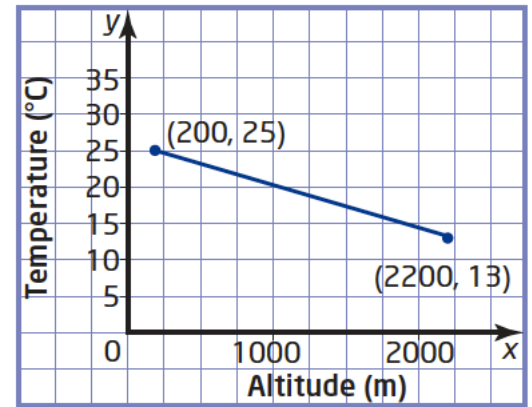
b) Interpret the slope as a rate of change.

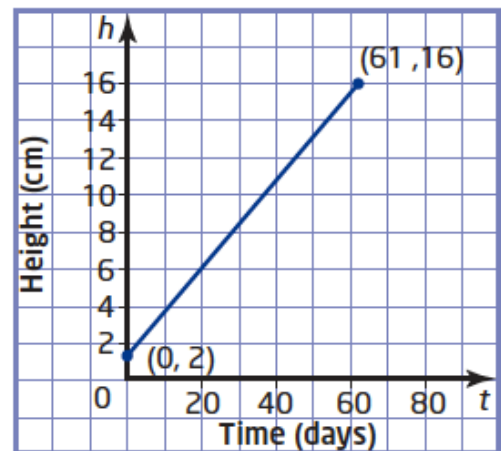

6. The price of a loaf of bread increased from $1.45 in 2003 to $1.78 in 2006. What is the average price increase per year?

7. The graph shows the height of a plant over a 2-month growth period. Calculate the rate of change per day.

8. The table shows the minimum volume of water needed to fight a typical fire in rooms of various sizes.

Floor Area (m²)	Minimum Volume of Water (L)
25	39
50	78
75	117

a) Graph the data in the table.

b) Calculate the rate of change.
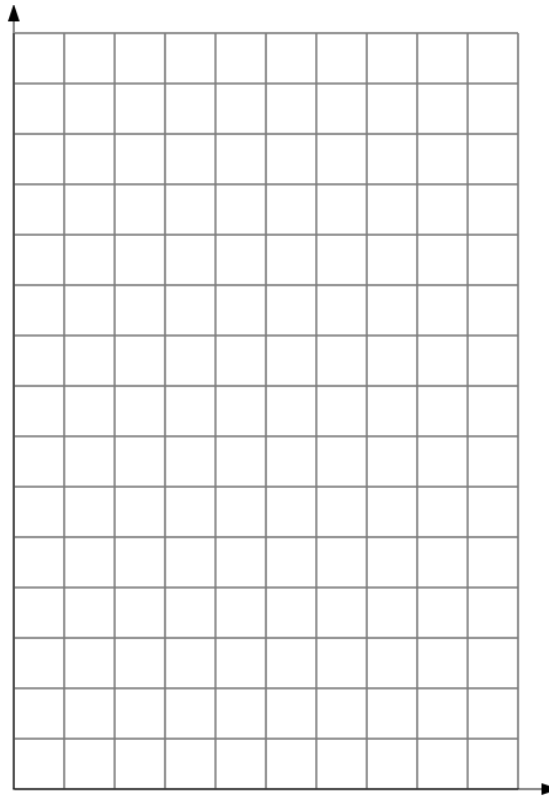
c) If a fire truck is pumping water at a rate of 200 L/min, how long will it take to put out a fire in a room with a floor area of 140 m²?

9. A large party balloon is being filled with helium at a constant rate. After 8 seconds, there is 2.5 L of helium in the balloon.

a) Graph this relation
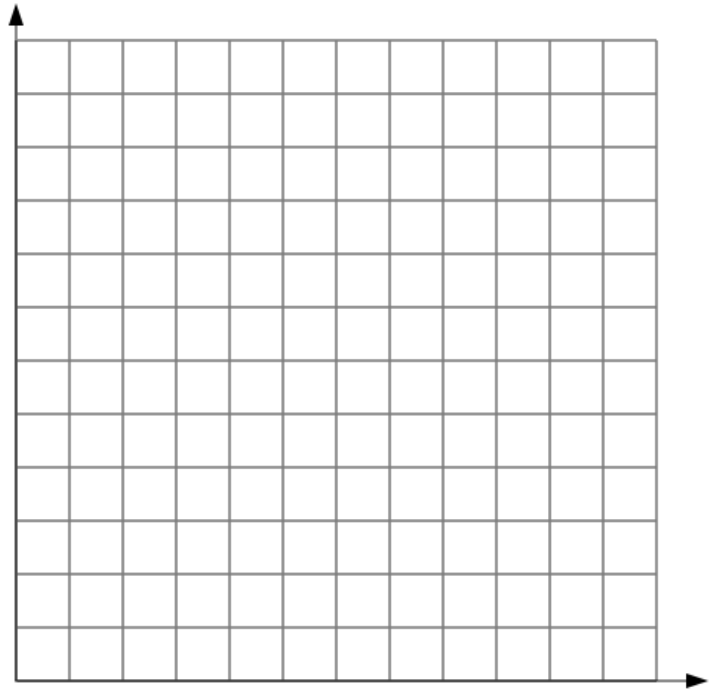
b) The balloon will burst if there is more than 10 L of helium in it. How long will it take to fill the balloon with that much helium? Mark this point on your graph.

10. The distance-time graph shows two cars that are travelling at the same time.

a) Which car has the greater speed, and by how much?
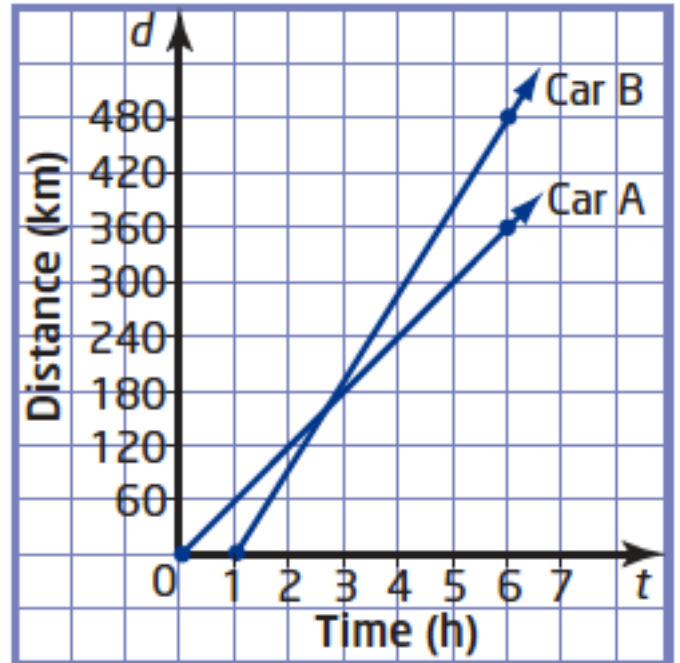
b) What does the point of intersection of the two lines represent?

11. A scuba tank holds 2.6 m³ of compressed air. A diver at a shallow depth uses about 0.002 m³ per breath and takes about 15 breaths per minute.

a) How much air will the diver use in 1 minute?

b) How long will the air in the tank last at this rate?

Answers

1) 7.4 L/min
2) 300 L/h
3) 60 flaps/s
4) a) -3.25   b) The height decreases by 3.25 m/s.
5) a) -0.006   b) The temperature decreases by 0.006 degrees Celcius/m.
6) 11 cents/year
7) 0.23 cm/day
8) a) graphs may vary b) 1.56 L/m² c) 1.1 min, to the nearest tenth
9) a) The graph is a line starting at (0,0) and passing through (8,2.5) b) 32 s
10) a) Car B, by 36 km/h b) It is the time at which they have travelled the same distance. If they are travelling in the same direction, it is the time at which Car B passes Car A.
11) a) 0.03 m²   b) about 87 minutes

5.5 – First Differences Worksheet
MPM1D
Jensen

1. For each table, create a third column to record first differences. Classify each relation as linear or non-linear.

a)

x	y
0	5
1	6
2	8
3	12

b)

x	y
3	−4
4	−1
5	2
6	5

c)

x	y
−1	1
0	0
1	1
2	4

d)

x	y
−5	8
−3	4
−1	0
1	−4

2. Each table shows the speed of a skydiver before the parachute opens. Without graphing, determine whether the relation is linear or non-linear.

a) There is no air resistance.

Time (s)	Speed (m/s)
0	0
1	9.8
2	19.6
3	29.4
4	39.2
5	49.0

b) There is air resistance.

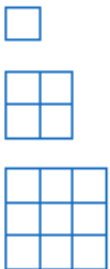| Time (s)	Speed (m/s)
0	0
1	9.6
2	16.6
3	23.1
4	30.8
5	34.2

3. Use first differences to determine which relations are linear and which are non-linear. Write an equation representing each linear relation. Extrapolate the relation to predict the outcome for the seventh step.

a)

Number of Houses	Number of Segments
1	
2	
3	
4	

b)

Base Side Length	Total Number of Tiles
1	
2	
3	
4	

4. Use first differences to determine which relations are linear and which are non-linear. Write an equation representing each linear relation. Extrapolate the relation to predict the outcome for the seventh step.
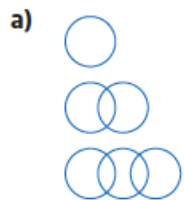
a)

Number of Circles	Number of Intersection Points
1	
2	
3	
4	

b)

Number of Sides	Number of Diagonals
4	
5	
6	
7	

5. A pattern is made from toothpicks as shown.

Diagram 1   Diagram 2   Diagram 3

a) Complete the following table.

Diagram Number	# Of Toothpicks
1	
2	
3	
4	

b) Use first differences to show that the pattern is a linear relation.

c) Write an equation for the relation

d) Extrapolate the relation to predict the outcome for the 10th step.

Answers

1) a) 1,2,4 non-linear   b) 3,3,3 linear   c) -1,1,3 non-linear   d) -4,-4,-4 linear
2) a) linear b) non-linear
3) a) linear, $S = 5h + 1$, 36 segments   b) non-linear, 49 tiles
4) a) linear, $I = 2c - 2$, 12 intersection points   b) non-linear, 35 diagonals
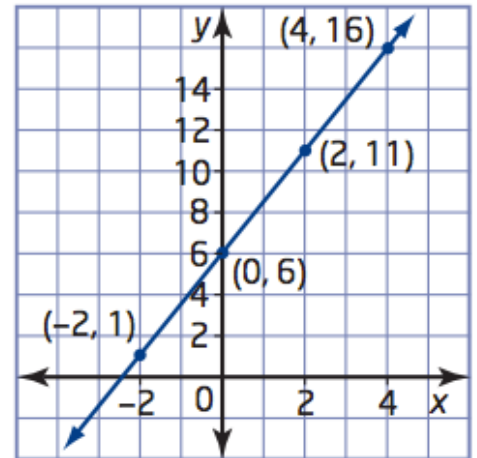5) a)

Diagram Number	# Of Toothpicks
1	4
2	7
3	10
4	13

b) first differences are the same, 3.
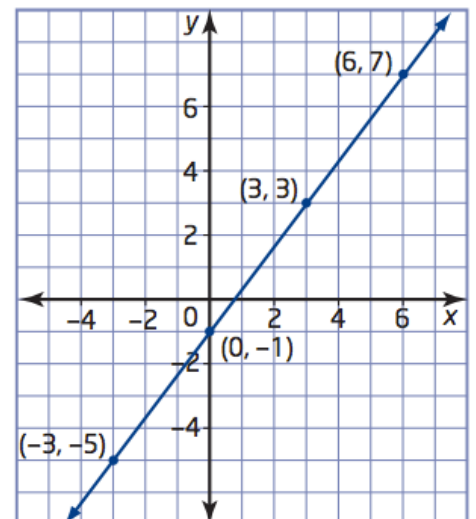c) $T = 3d + 1$
d) 31 toothpicks

1. a) Find the slope of the following graph using the formula $m = \frac{y_2 - y_1}{x_2 - x_1}$, where one point on the line

has coordinates (x_1, y_1) and another point on the line has coordinates (x_2, y_2)

b) What is the y-intercept? (the initial value)

c) Write an equation for the relation

2. a) Find the slope of the following graph using the formula $m = \frac{y_2 - y_1}{x_2 - x_1}$, where one point on the line

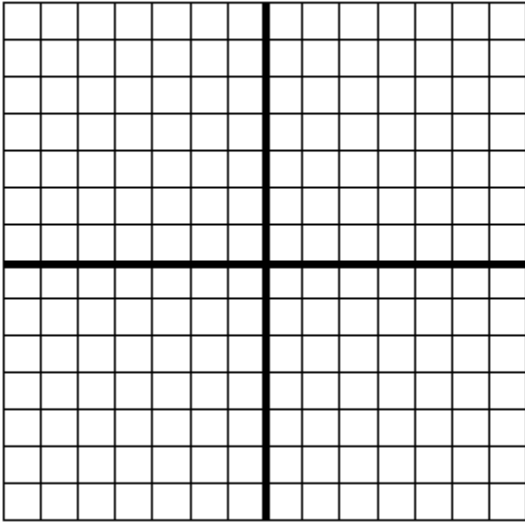has coordinates (x_1, y_1) and another point on the line has coordinates (x_2, y_2)

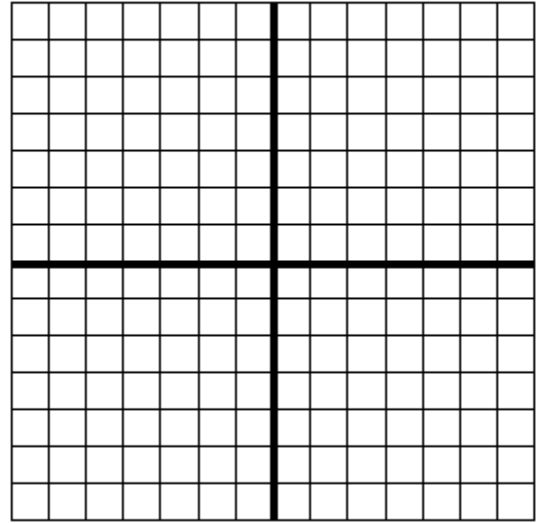b) What is the y-intercept? (the initial value)

c) Write an equation for the relation

3. Graph each of the following lines on the grids provided.
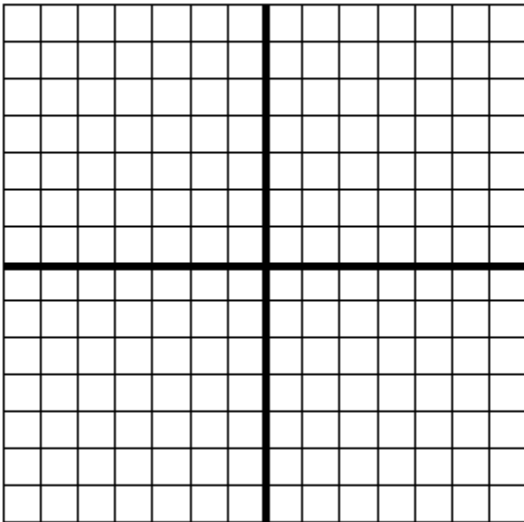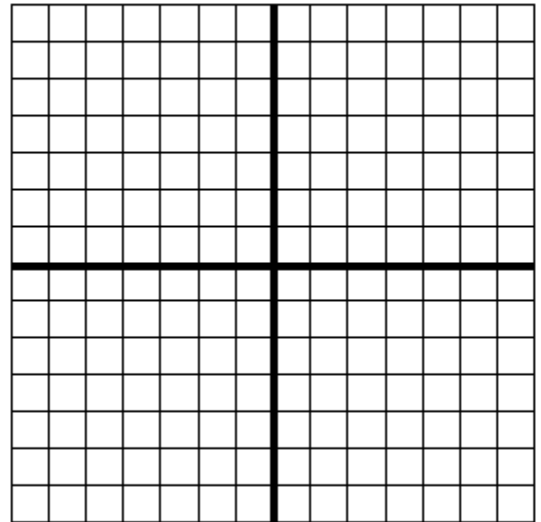
a) $y = 2x + 1$

b) $y = -3x + 4$

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

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

4. Using the table of values:

a) Calculate the slope (constant of variation, m)

x	y
0	2
1	5
2	8
3	11
4	14

b) What is the initial value? (y-intercept, b)

c) Is this an example of direct or partial variation?

d) Write the equation of the relation in the form $y = mx + b$.

5. Using the table of values:

a) Calculate the slope (constant of variation, m)

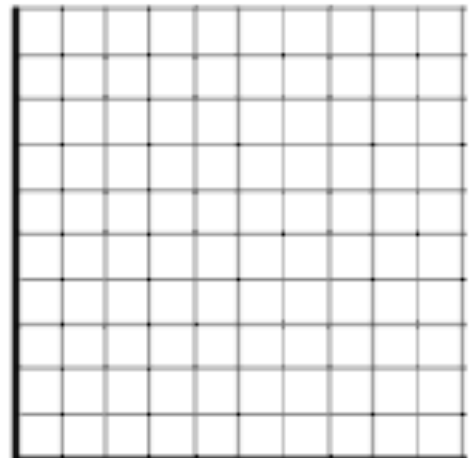| x	y
-6	1
-4	6
-2	11
0	16
2	21

b) What is the initial value? (y-intercept, b)

c) Is this an example of direct or partial variation?

d) Write the equation of the relation in the form $y = mx + b$.

6. A house painter charges a flat fee of $40 plus $20 per hour to paint the interior of a house. Represent the relation using a table of values, a graph, and an equation.

Time (hours)	Cost ($)
0	
1	
2	
3	
4	
5	

7. The cost of a taxi ride is $5.00 plus $0.75 for every 0.5 km.

a) Identify the slope (m) and the y-intercept (b) of the line. What do they represent?

b) Is this a direct or a partial variation? Explain.

c) Write an equation relating the cost and the distance travelled.

8. y varies directly with x. When x=4, y=9.

a) Find the slope (m) and y-intercept (b)

b) Write an equation for this relationship

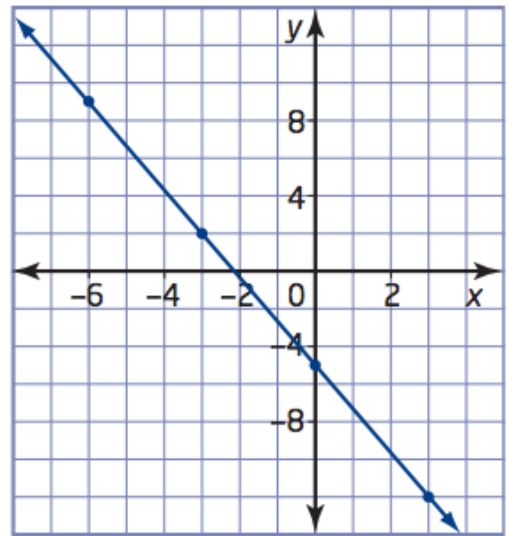**9. y varies partially with x. When x=0, y=5, and when x=6, y=8**
a) Find the slope (m) and y-intercept (b)

b) Write an equation for this relationship

10. Based on the graph

a) What is the slope (m)?

b) What is the y-intercept (b)?

c) Write an equation for the line in the form $y = mx + b$

11. A company tests the heavy-duty elastic bands it makes by measuring how much they stretch when supporting various masses. This table shows the results of tests on one of the elastic bands.

Mass (kg)	Length (cm)
0	6.2
2	9.6
4	13
6	16.4
8	19.8

a) What is the initial value (b)? What does it represent?

b) Calculate the constant of variation (slope)

c) Write an equation for the relationship

d) Use your equation to predict how long the elastic band will be when it is supporting a 10 kg mass.
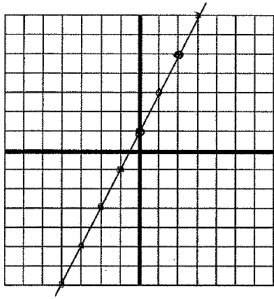
Answers:

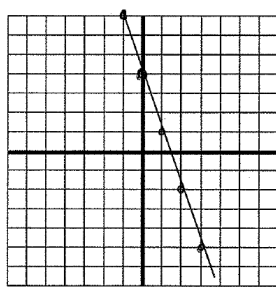1. a) $m = \frac{5}{2}$ b) b=6 c) $y = \frac{5}{2}x + 6$

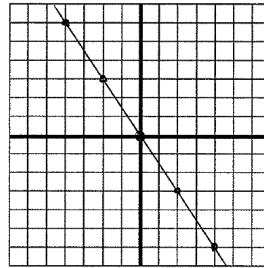2. a) $m = \frac{4}{3}$ b) b=-1 c) $y = \frac{4}{3}x - 1$
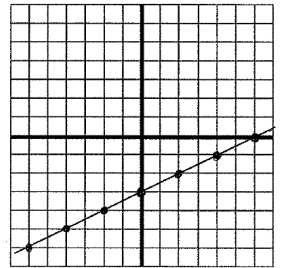
3.

a) $y = 2x + 1$

b) $y = -3x + 4$

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

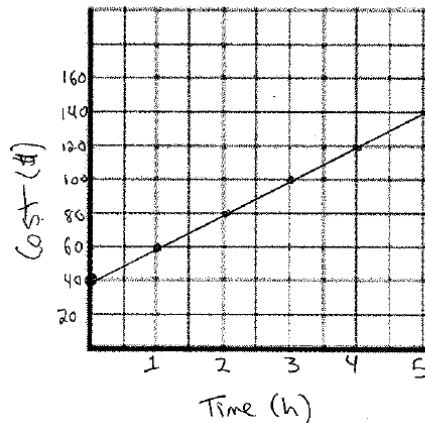d) $y = \frac{1}{2}x - 3$

4. a) $m = 3$ b) b=2 c) partial d) $y = 3x + 2$

5. a) $m = \frac{5}{2}$ b) $b = 16$ c) partial d) $y = \frac{5}{2}x + 16$

6. $y = 20x + 40$

Time (hours)	Cost ($)
0	40
1	60
2	80
3	100
4	120
5	140

7. a) $m = 1.5$ $b = 5$ b) partial c) $y = 1.5x + 5$

8. a) $m = 2.25$ $b = 0$ b) $y = 2.25x$

9. a) $m = \frac{1}{2}$ $b = 5$ b) $y = \frac{1}{2}x + 5$

10. a) $m = \frac{-7}{3}$ b) $b = -5$ c) $y = \frac{-7}{3}x - 5$

11. a) $b = 6.2$ b) $m = 1.7$ c) $y = 1.7x + 6.2$ d) 23.2 cm

FINDING SLOPE #1   (Graphing method)

Graph the points and find slope using $m = \dfrac{rise}{run}$
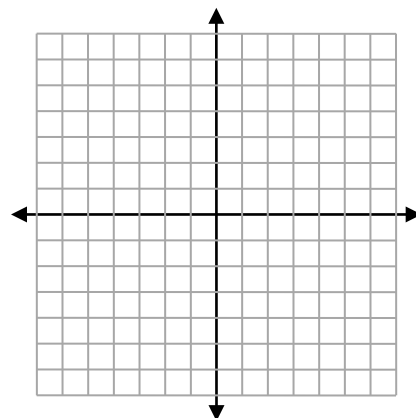
1. Plot the points (0, 2) and (4, 3) and find slope.

2. Plot the points (0, -3) and (2, 1) and find the slope.

3. Plot the points (0, -1) and (1, 4) and find the slope.

4. Plot the points (0, 3) and (4, 1) and find the slope.

5. Plot the points (0, 1) and (1, -3) and find the slope.

6. Plot the points (0, -3) and (3, -1) and find the slope.

7. Plot the point (0. -2) and (1, 2) and find the slope.

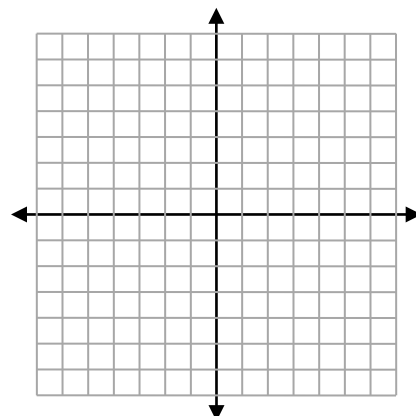8. Plot the point (0, 4) and (2, -6) and find the slope.
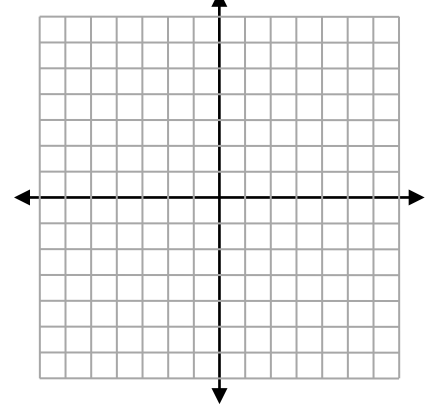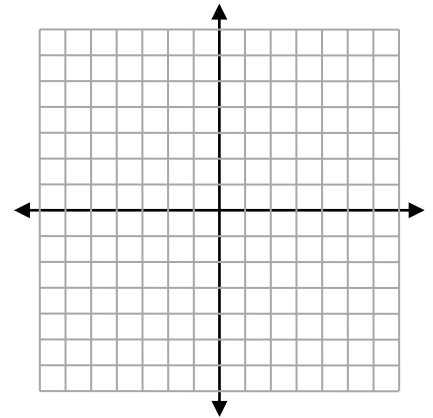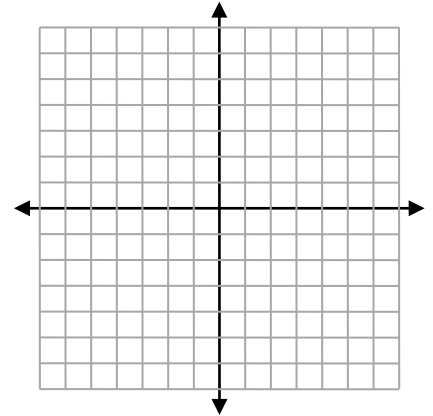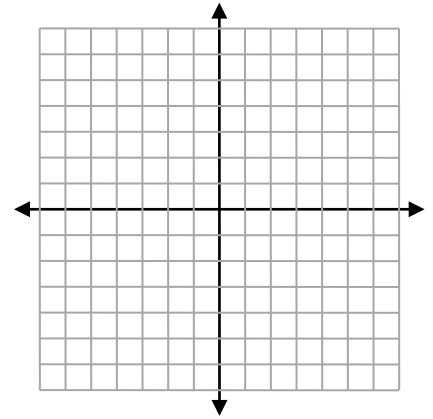
9. Plot the points (0, -2) and (1, 4). and find slope.
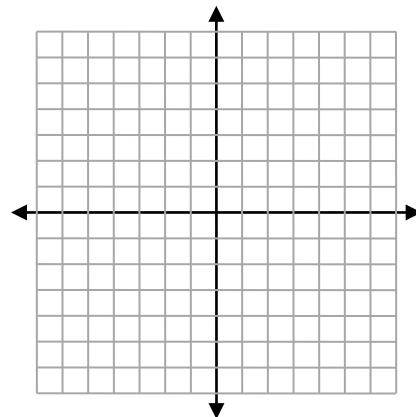
10. Plot the points (-4, 6) and (5,3) and find the slope.
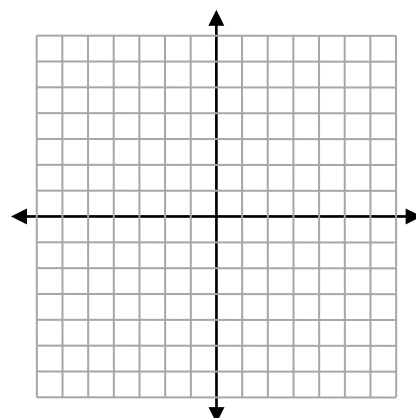
11. Plot the points (2, -1) and (7, -1) and find the slope.

12. Plot the points (-5, 3) and (-4, 9) and find the slope.

13. Plot the points (6, 4) and (3, 2) and find the slope.

14. Plot the points (-3, 4) and (3, -4) and find the slope.

15. Plot the point (-2, 3) and (2, 2) and find the slope.

16. Plot the point (0, 2) and (-1, -1) and find the slope

FINDING SLOPE #2 (Using slope formula)

Find the slope using the formula $m = \dfrac{y_2 - y_1}{x_2 - x_1}$

1. Find the slope using points: (2, 2) and (-5, 4)

2. Find the slope using points: (3, 9) and (-5, 3)

3. Find the slope using points: (5, 5) and (4, 2)

4. Find the slope using points: (5, 7) and (2, 7)

5. Find the slope using points: (-4, 0) and (12, 2)

6. Find the slope using points: (2, 5) and (-6, -3)

7. Find the slope using points: (-8, -2) and (1, 4)

8. Find the slope using points: (0, -3) and (-4, 2)

9. Find the slope using points: (5, 1) and (9, 4)

10. Find the slope using points: (-10, 6) and (-5, 8)

12. Find the slope using points: (7, -3) and (11, -4)

12. Find the slope using points: (13, 0) and (-2, -12)

13. Find the slope using points: (-15, 7) and (-10, 6)   14. Find the slope using points: (-13, 8) and (21, 8)

15. Find the slope using points: (-3, -2) and (1, 4)   16. Find the slope using points: (2, 5) and (8, 9)

17. Find the slope using points: (3, 3) and (2, 0)   18. Find the slope using points: (-2, 3) and (3, 0)

19. Find the slope using points: (1, 2) and (2, 6)   20. Find the slope using points: (-3, -4) and (0, -2)

21. Find the slope using points: (-2, 5) and (4, -2)   22. Find the slope using points: (2, 5) and (11, 11)

23. Find the slope using points: (-1, -2) and (3, 2)   24. Find the slope using points: (3, -1) and (13, 1)

25. Find the slope using points: (-2, -5) and (2, 3)   26. Find the slope using points: (-7, 4) and (5, 2)

Answers – Finding Slope #1 (Graphing)

1) $\frac{1}{4}$
2) 2
3) 5
4) $\frac{-1}{2}$
5) -4
6) $\frac{2}{3}$
7) 4
8) -5
9) 6
10) $\frac{-1}{3}$
11) 0
12) 6
13) $\frac{2}{3}$
14) undefined
15) $\frac{-1}{4}$
16) 3

Answers – Finding Slope #2 (Formula)

1) $\frac{-2}{7}$
2) $\frac{3}{4}$
3) 3
4) 0
5) $\frac{1}{8}$
6) 1
7) $\frac{2}{3}$
8) $\frac{-5}{4}$
9) $\frac{3}{4}$
10) $\frac{2}{5}$
11) $\frac{-1}{4}$
12) $\frac{4}{5}$
13) $\frac{-1}{5}$
14) 0
15) $\frac{3}{2}$
16) $\frac{2}{3}$

17) 3
18) $\frac{-3}{5}$
19) 4
20) $\frac{2}{3}$
21) $\frac{-7}{6}$
22) $\frac{2}{3}$
23) 1
24) $\frac{1}{5}$
25) 2
26) $\frac{-1}{6}$