Day 1

Writing an Equation Given Two Sets of Points - using the two sets of points, the slope and the y-intercept can be found.

Follow these steps: **1)** use the points to find the slope using $m = \frac{y_1 - y_2}{x_1 - x_2}$ **2)** put the slope and one set of points (it doesn't matter which one) into the slope-intercept formula to find the y-intercept **3)** put the slope and the y-intercept into the formula to write the equation

Example

Write the equation given two sets of points

(6,-7), (3,-1)

Find the slope

$m = \frac{y_1 - y_2}{x_1 - x_2}$

$m = \frac{-7-(-1)}{6-3} = \frac{-7+1}{3} = \frac{-6}{3} = -2$

Find the y-intercept

$y = mx + b$

$-7 = -2(6) + b$

$-7 = -12 + b$

$+12 \quad +12$

$5 = b$

Write the equation

$y = mx + b$

$y = -2x + 5$

Write the equation given two sets of points

1. (4, 5) and (2, 1)

2. (3, –2) and (–3, –8)

3. (–1, 7) and (1, 5)

4. (–2, –1) and (0, 3)

5. 3, 4) and (5, –4)

6. (–3, 6) and (–5, 2)

7. (6, 10) and (3, –5)

8. (3, –3) and (7, 5)

Solutions

1. y = 2x – 3
2. y = x – 5
3. y = –x + 6
4. y = 2x + 3
5. y = –4x + 16
6. y = 2x + 12
7. y = 5x – 20
8. y = 2x – 9

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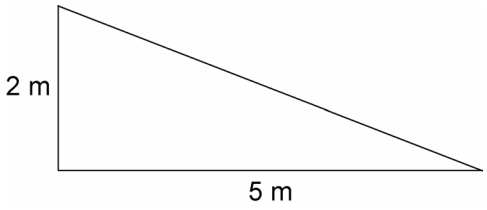
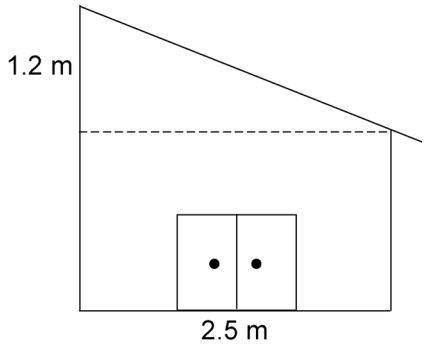
Practice: Slope

1. Find the slope of each object.

a)

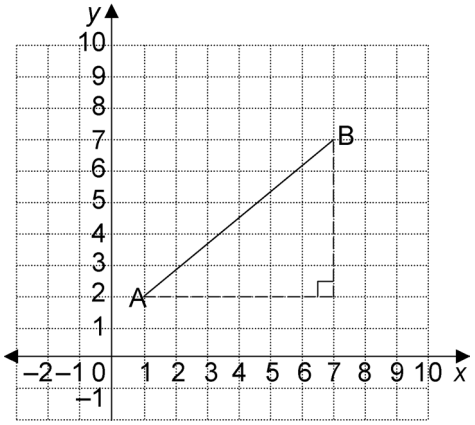


b)

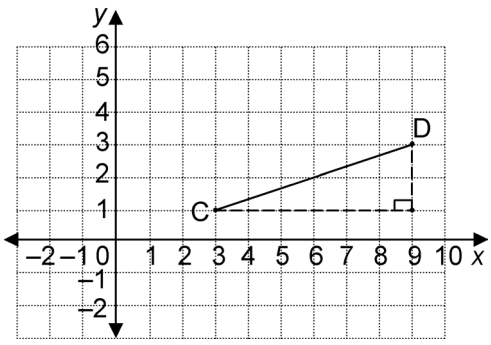


2. Find the slope of each line segment.

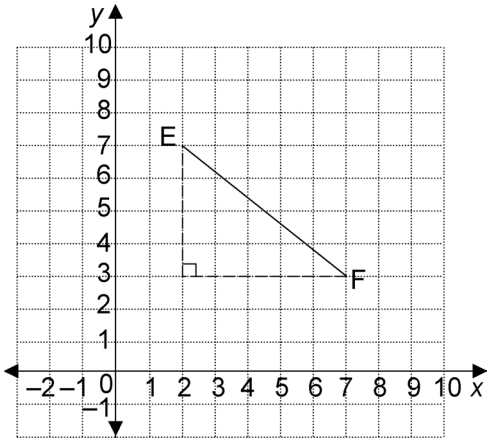
a)



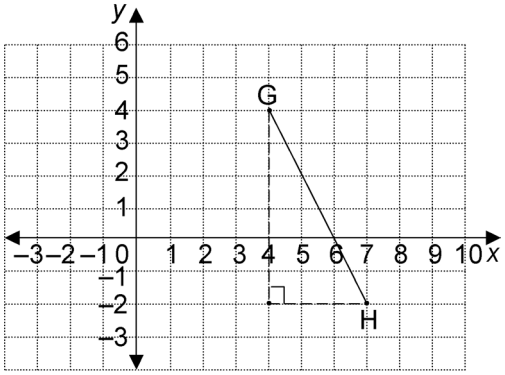
b)



c)



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?

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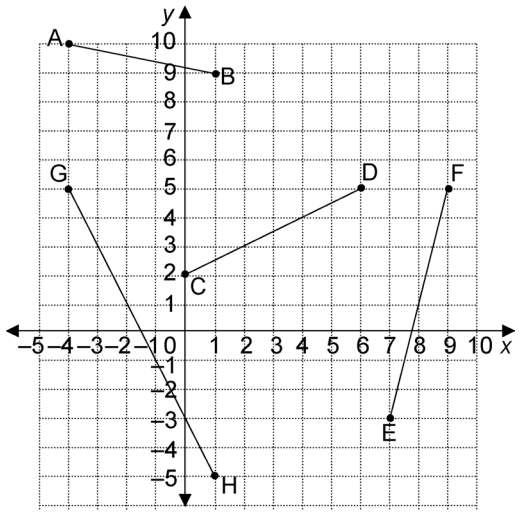
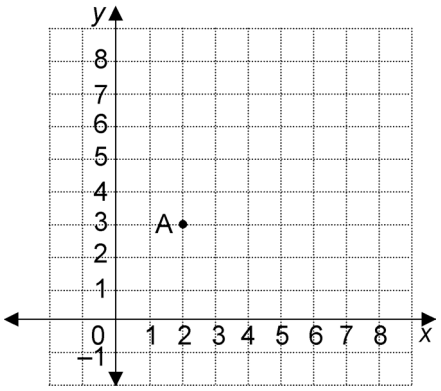
4. Find the slope of each line segment.



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 $-\frac{1}{2}$. What are possible coordinates of B?



Solutions for "Slope"

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BLM 5.3.1 Practice: Slope

1. **a)** $-\frac{2}{5}$ **b)** –0.48

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

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

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

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