

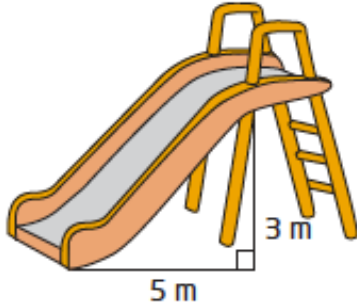
## 5.3 – Slope Worksheet

MPM1D

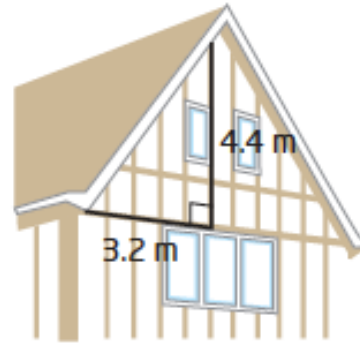
Jensen

1. Determine the slope of each object.

a)



b)



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: \_\_\_\_\_

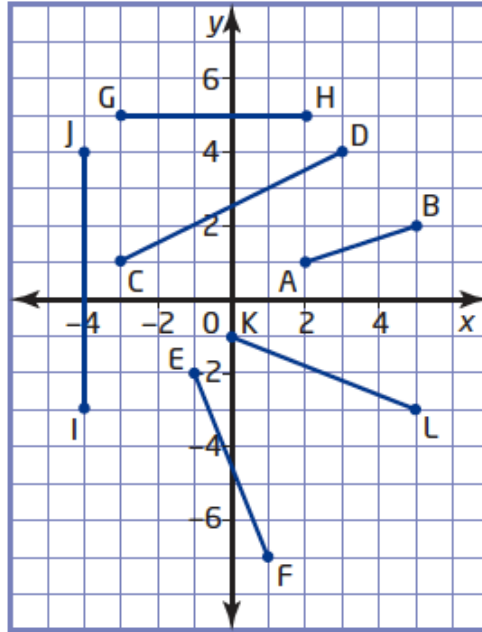
b) CD: \_\_\_\_\_

c) EF: \_\_\_\_\_

d) GH: \_\_\_\_\_

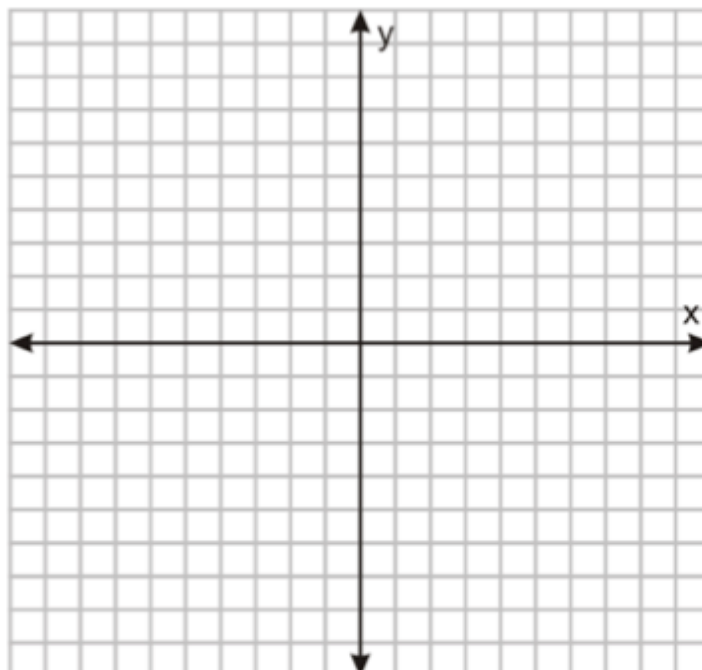
e) IJ: \_\_\_\_\_

f) KL: \_\_\_\_\_



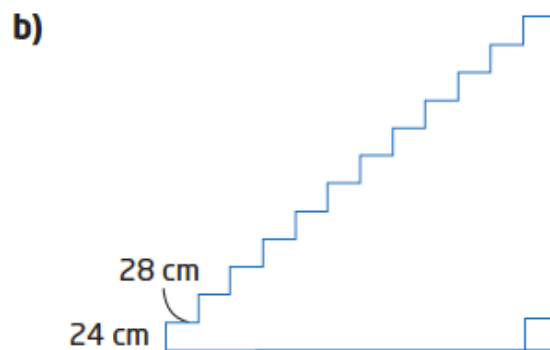
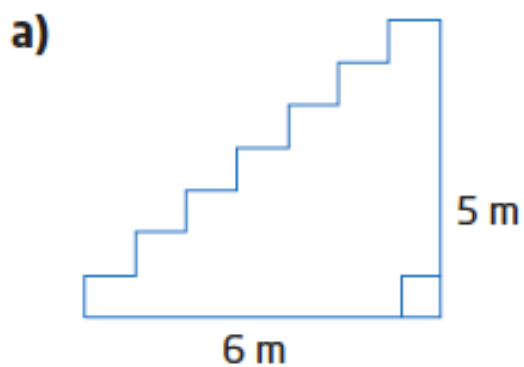
5. A line segment has one endpoint of A(3, 1).

- 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.



8. Given a point  $A(-2, 5)$ , find the coordinates of a point B so that the line segment AB has each slope.

a)  $\frac{2}{3}$

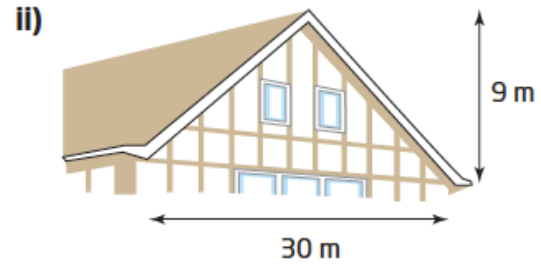
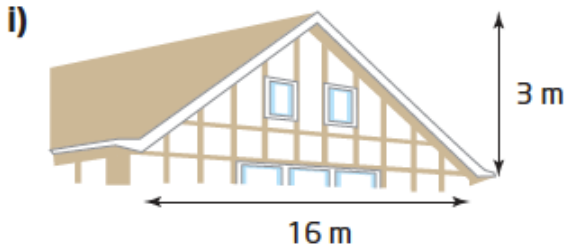
b)  $\frac{-2}{3}$

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.



- 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