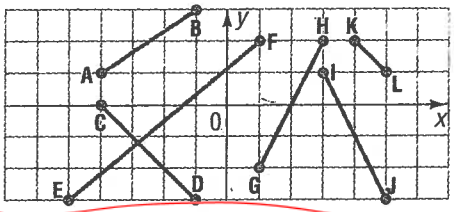
Slope of a Straight Line | Back of outline

1. m_{AB} is positive m_{CD} is negative m_{EF} is positive

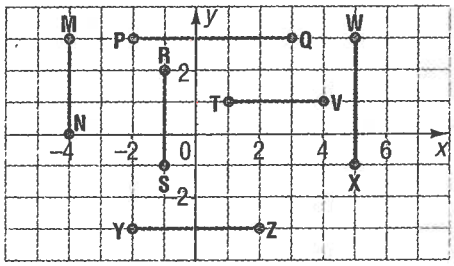
m_{GH} is positive m_{IJ} is negative m_{KL} is negative

Practice

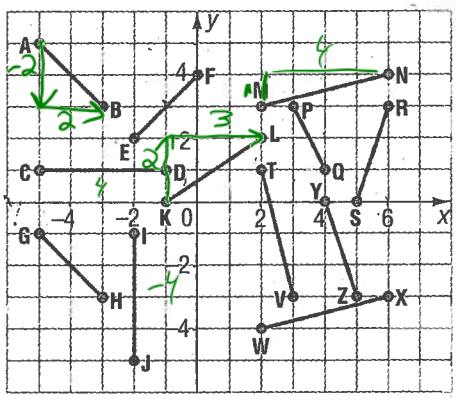
1. State whether each slope is positive or negative.



2. State the slope and the equation of each line segment.



3. State the slope of each line segment.



Determine the slope of the line passing through each pair of points.

4. A(5, 9), B(7, 8)

5. C(3, 4), D(7, 4)

6. M(9, 3), N(0, 1)

7. P(0, −5), Q(0, 4)

8. K(2, 5), L(0, 8)

9. A(−2, −3), B(3, 3)

State whether the slope is positive or negative for each pair of points.

10. C(3, 4), D(−2, −5)

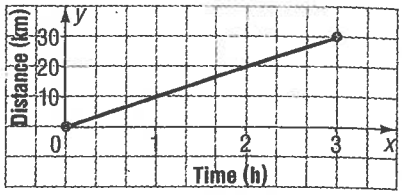
11. P(−1, 3), Q(0, 2)

12. M(−6, 0), N(4, 5)

13. X(3, 5), Y(7, 2)

Problems and Applications

14. The graph shows how far Danzel cycled in 3 h.



a) About how far did he travel in 2 h 45 min?

b) About how long did it take him to cycle 15 km?

c) What does the slope of this line tell you?

15. a) On the same grid, draw a line through A(1, 4) and B(−2, 2) and a line through P(−1, −1) and Q(2, 1).

b) Calculate the slope of each line in part a).

c) Use your answer to part b) to explain why these lines are parallel.

16. a) Plot the points P(−4, 2), Q(−1, −2), R(4, −2), and S(1, 2). Join PQ, QR, RS, and S

b) Draw diagonals PR and QS.

c) The diagonals PR and QS are perpendicular to each other. Find the slope of each diagonal. How are the slopes related?

d) Is this relationship true for any pair of perpendicular lines?

17. The lengths of 2 ski slopes are 625 m and 760 m. The horizontal distance from the start of the run to the end of the run for both slopes is 300 m.

a) What is the height of the higher ski slope to the nearest metre?

b) Which of the 2 ski slopes is steeper? Explai

NUMBER POWER

Find the values of x and y that make the following true.

$$\frac{x^y}{y^x} = 1, x \neq y$$

2. m_{MN} is undefined

$x = -4$

$m_{PQ} = 0$

$y = 3$

$m_{YZ} = 0$

$y = -3$

3. $m = \frac{\text{Rise}}{\text{Run}}$

$m_{AB} = \frac{-2}{2} = -1$

$m_{CD} = \frac{0}{4} = 0$

$m_{KL} = \frac{2}{3}$

$m_{IJ} = \frac{-4}{0} =$ undefined

$m_{MN} = \frac{1}{4}$

4. $A(5, 9)$ $B(7, 8)$ (x_1, y_1; x_2, y_2)

"Δ means the change"
↳ delta

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

$$= \frac{8 - 9}{7 - 5}$$

$$m_{AB} = \frac{-1}{2}$$

6. $K(2, 5)$ $L(0, 8)$

$$m_{KL} = \frac{\Delta y}{\Delta x} = \frac{y_2 - y_1}{x_2 - x_1}$$

$$= \frac{8 - 5}{0 - 2}$$

$$m_{KL} = \frac{3}{-2} = -\frac{3}{2}$$

Do 6 and 10 on boards

Homework: Slope (Back of Outline): 5, 7, 9, 11, 13

Slope Handout - finish it.

Review, pg 290 # 11-18 (4-10 if not done yet)