$y = 2x$

$y = x + 3$

$(3, 6) = P \text{ of } I$

y

x

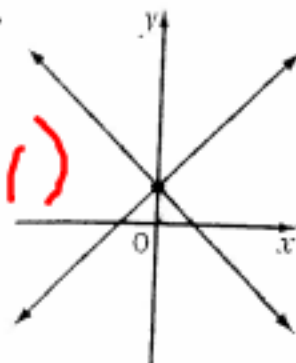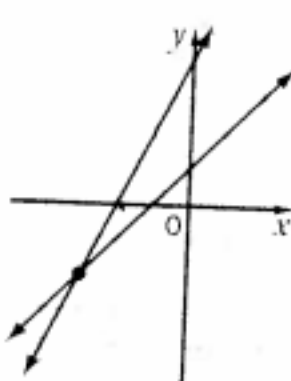*(handwritten, red):* **Is the point of intersection** ~~April 29~~

Practice

A

Find the coordinates of the point of intersection for each pair of lines.

1.

(handwritten, red): (0, 1)

2.

What is the point of intersection for each of the following pairs of lines?

(handwritten, purple): (0, 0) is the pt of I.

3.

x	y
-2	-2
-1	-1
0	0
1	1
2	2

x	y
-2	2
-1	1
0	0
1	-1
2	-2

4.

x	y
2	1
1	0
0	-1
-1	-2
-2	-3

x	y
2	4
1	2
0	0
-1	-2
-2	-4

5. Write an equation for the line represented by each table of values in questions 3 and 4.

Find the coordinates of the point of intersection of each pair of lines.

Applications and Problem Solving

17. a) Graph the lines $y = 2x - 4$ and $y = x - 4$ on the same set of axes.
b) What figure is formed by these lines and the x-axis?

B

18. Truck rentals Two companies rent trucks. Company A charges $80.00 for the truck, plus $0.20/km. Company B charges $0.60/km.
a) Write an equation for each company's rental cost in terms of the distance driven.
b) Graph both equations on the same set of axes. If you graph manually, use the following numbers of kilometres in your tables of values: 50, 100, 150, 200, 250, 300.
c) Find the coordinates of the point of intersection.
d) Explain the meaning of the point of intersection.
e) Which company is cheaper if you drive 150 km? 250 km?

19. Highway driving At 12:30, Kenji left town driving at 80 km/h. At 13:00, Yvette left town along the same highway driving at 100 km/h.
a) Construct a table of distance and time values for each driver.
b) Plot both graphs on the same grid.
c) At what time did Yvette catch up with Kenji?
d) How far had they travelled?

20. a) Graph all 3 lines on the same grid or in the same viewing...

6. $y = 2x$

x	y
-2	-4
-1	-2
0	0
2	2
2	4
(3)	(6)

$y = x + 3$

x	y
-2	1
-1	2
0	3
1	4
(3)	(6)

(3, 6)

9.

$y = x + 4$

x	y
-2	2
-1	3
0	4
1	5
2	6

$y = 3x$

x	y
-2	-6
-1	-3
0	0
1	3
2	6
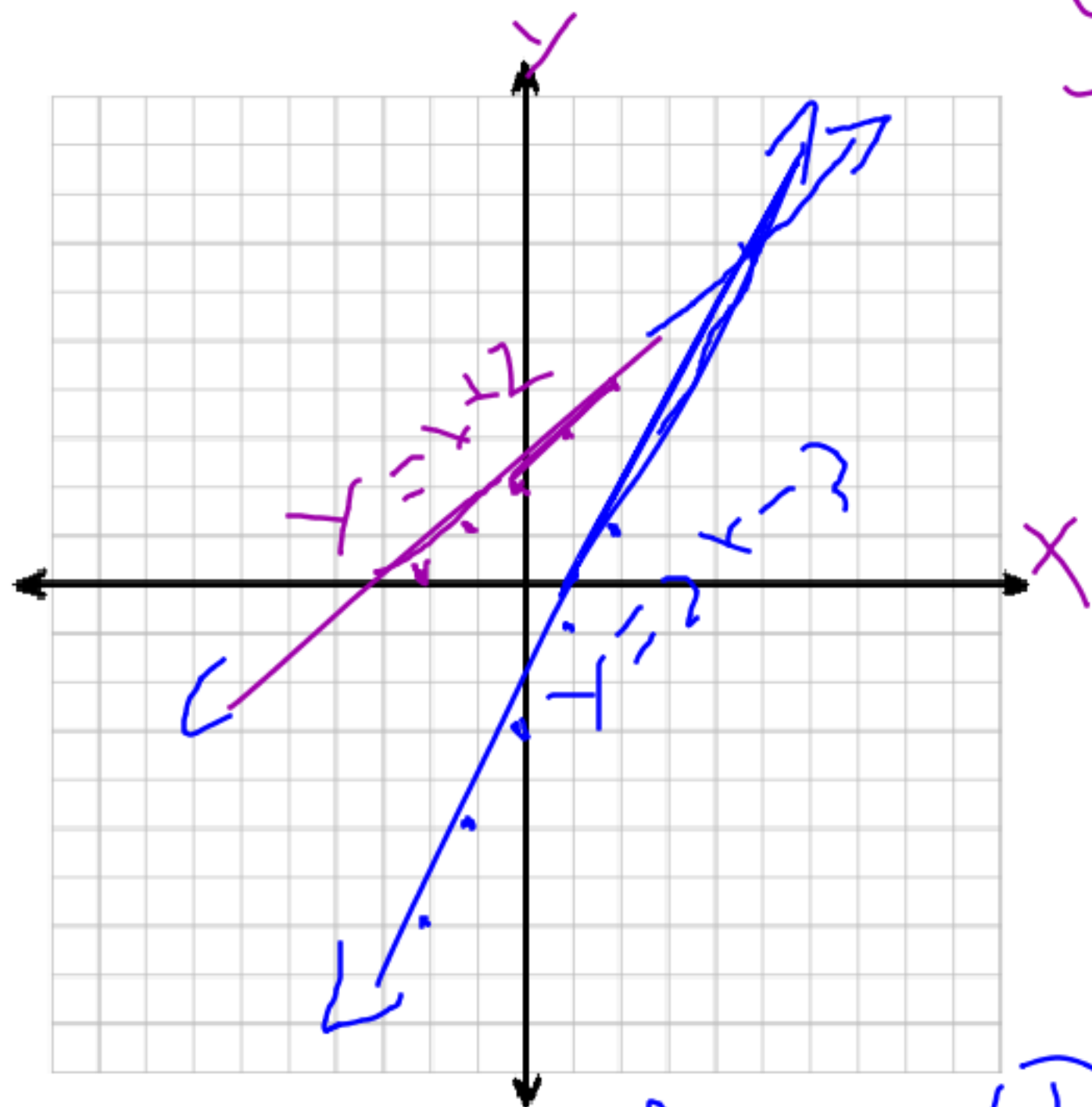
POI (2,6)

1.

$y=x+2$ | $y=2x-3$

x	y
-3	0
-1	1
0	2
1	3
2	4

x	y
-2	-7
-1	-5
0	-3
1	-1
2	1

(5,7) POI

(13.)

$x = 3$

$y = 2$

$y = 2$

$x = 3$

(3,2) is the
P of I

x	y
3	2
3	1
3	0
3	-1
3	-2

x	y
2	2
1	2
0	2
-1	2
-2	2

$x = -4$

X	Y
-4	-2
-4	-1
-4	0
-4	1
-4	2

$y = 5$

X	Y
-2	5
-1	5
0	5
1	5
2	5
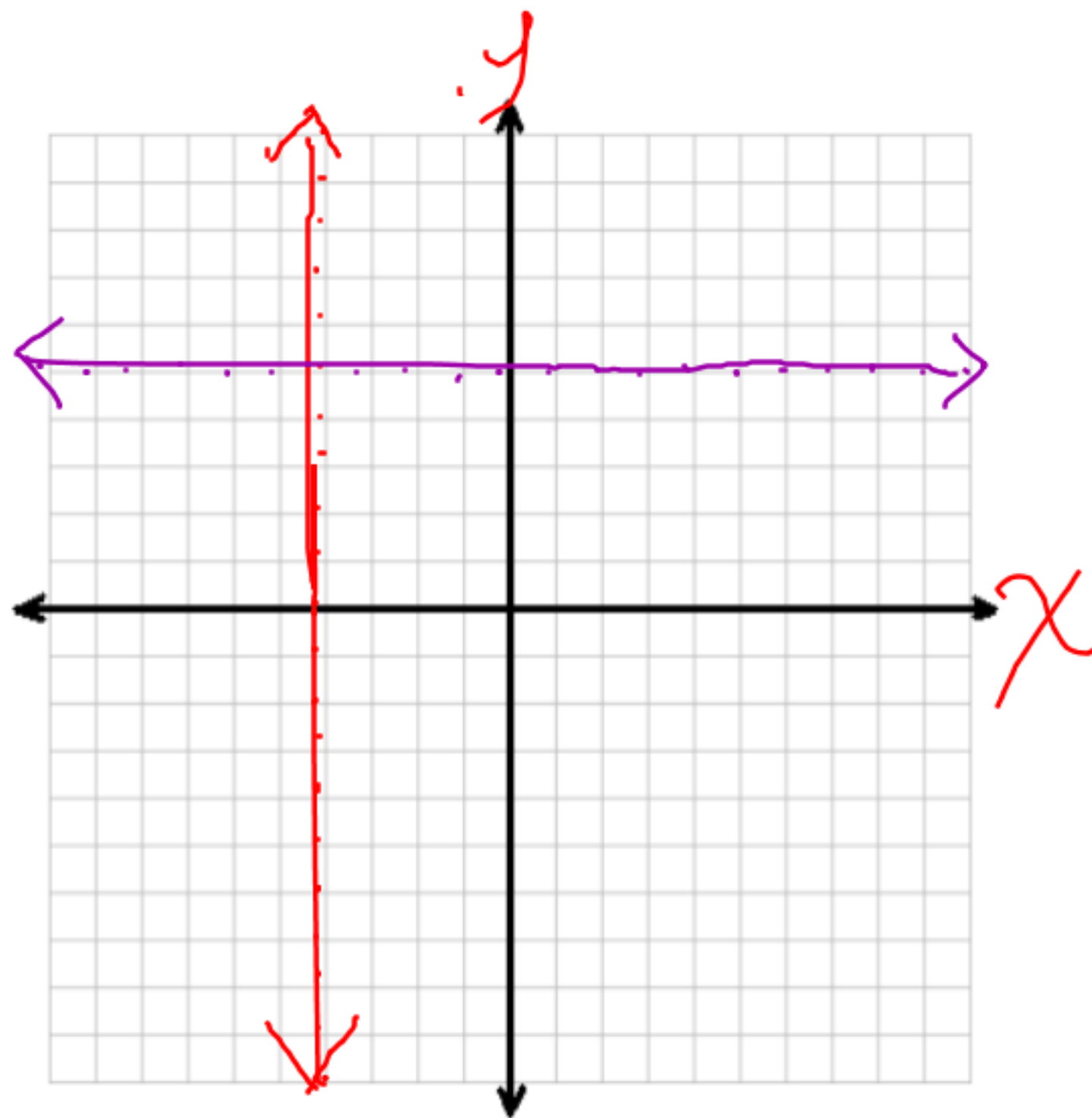
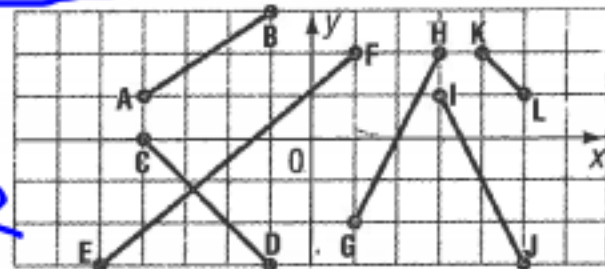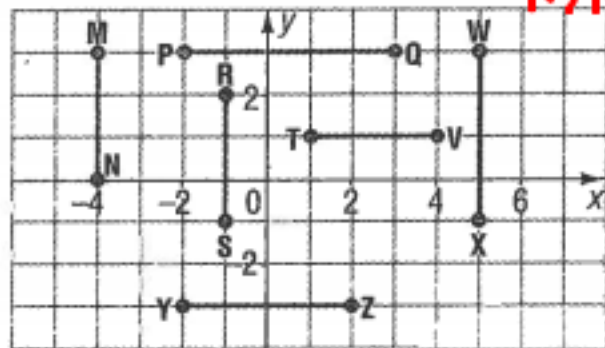P of l is
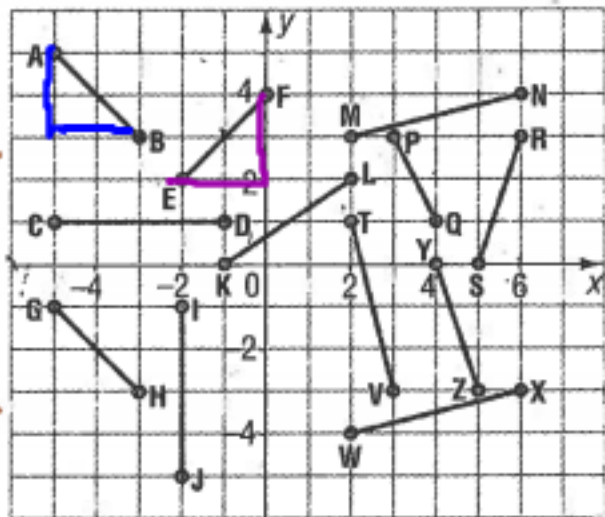-4, 5

Practice

1. State whether each slope is positive or negative.

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

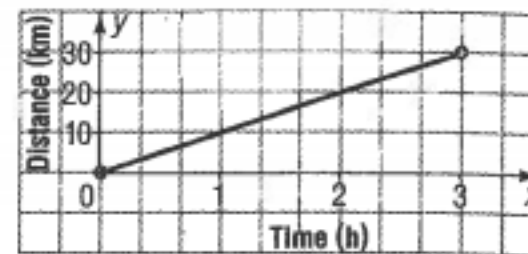**3.** State the slope of each line segment.

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)

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 12 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

Handwritten annotations:

Slope = m

m_{AB} positive

m_{CD} negative

m_{EF} positive

m_{GH} positive

m_{IJ} negative

m_{KL} = negative

m_{MN} : undefined

m_{PQ} = 0

Homework: p. 441 Intersecting Lines

slope finish #3

Test: MAY 7