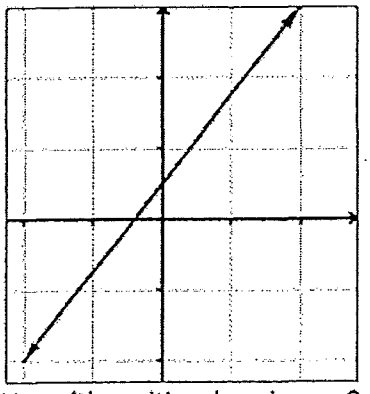
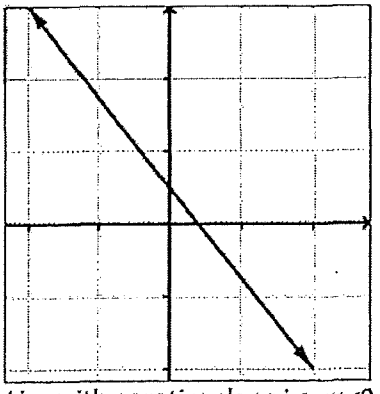
Date: _____

5.3 Finding Slope Using a Formula

Remember:



Line with positive slope i.e. m>0

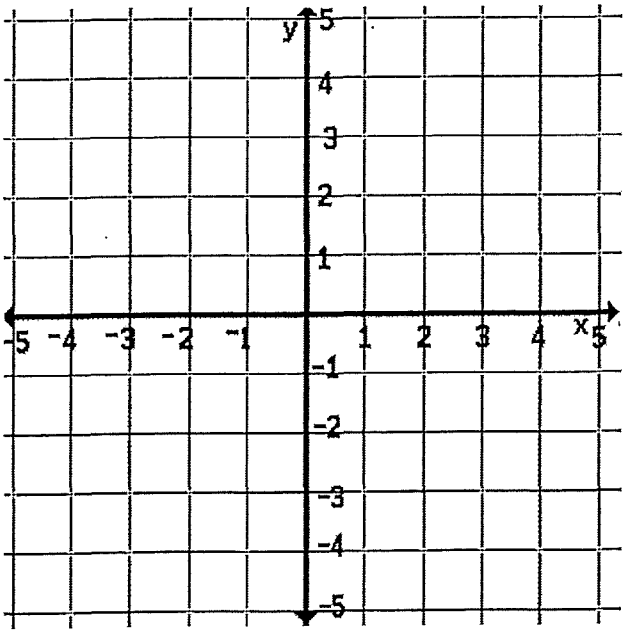


Line with negative slope i.e. m<0

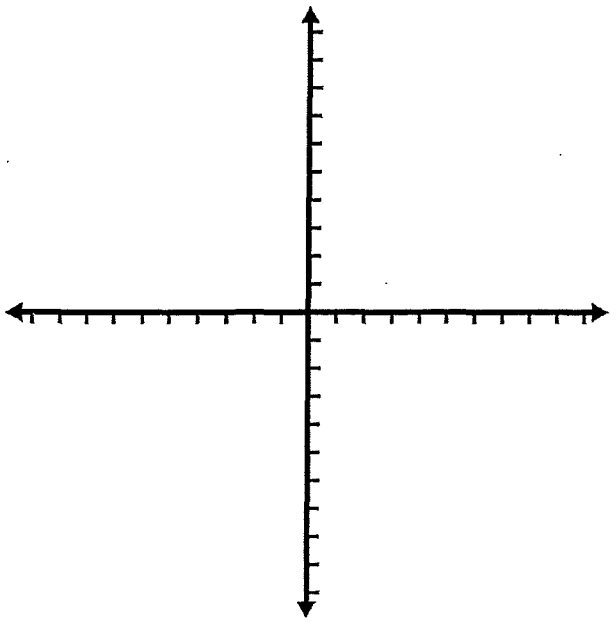
Formula for Slope:

$$slope = \frac{rise}{run}$$

Example 1. If $D(-2,-1)$ is a point on the line segment DF with slope of $\frac{-1}{4}$, find some possibilities for F.



In general, for any points $A(x_1, y_2)$ and point $B(x_2, y_2)$ the slope of a line segment can be calculated.



Examples:

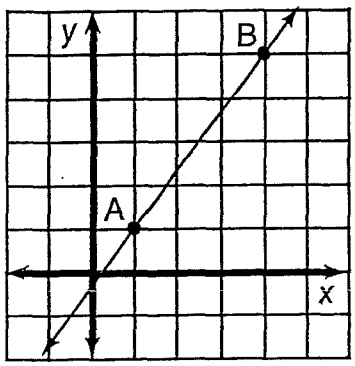
1. Use the slope formula to calculate the slope of the line segment with points $D(6,8)$ and $H(12,10)$.

2. Use the formula to find the slope of the line segment with points $D(-5,3)$ and $E(5,-3)$.

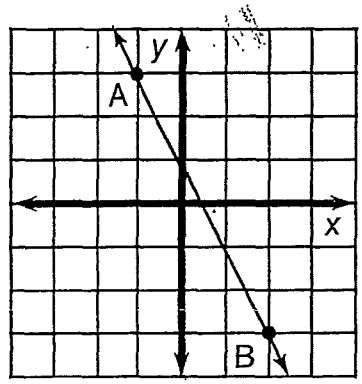
What Do You Call a Duck That Steals?

For the first six exercises, find the slope of the line $\overleftrightarrow{AB}$. For the remaining exercises, find the slope of the line that passes through the two given points. Cross out each box in the rectangle below that contains a correct answer. When you finish, print the letters from the remaining boxes in the spaces at the bottom of the page.

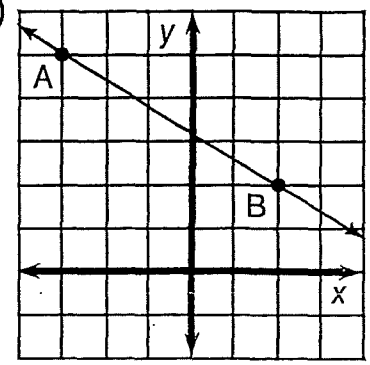
(1)



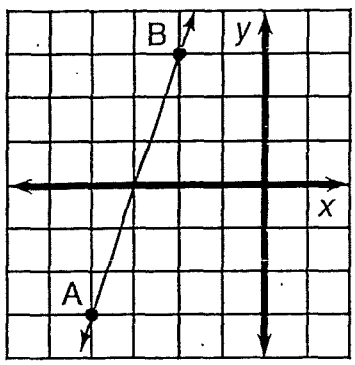
(2)



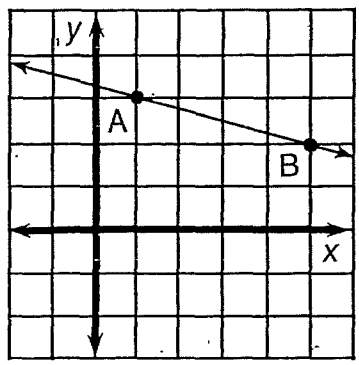
(3)



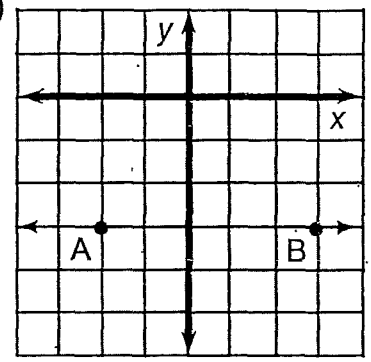
(4)



(5)



(6)



(7) (2, 1); (5, 3)

(8) (8, 3); (2, 5)

(9) (1, −4); (6, −2)

(10) (−3, 1); (−7, 4)

(11) (9, 2); (3, −1)

(12) (−5, 8); (−4, 2)

(13) (0, −1); (4, −7)

(14) (1, −1); (−2, −6)

(15) (−4, −8); (−2, 0)

(16) (−3, −3); (0, 0)

(17) (2, 5); (9, 1)

(18) (0, 0); (−2, 7)

DU 0	AB −6	CK $-\frac{3}{5}$	ST $-\frac{4}{7}$	AR 9	IG $\frac{1}{2}$	AT $-\frac{7}{2}$	OB $-\frac{7}{6}$	IG $\frac{4}{3}$	ET $\frac{2}{3}$	BE $-\frac{5}{4}$	ST $\frac{5}{3}$
CA $\frac{2}{5}$	RD $\frac{1}{6}$	RI $-\frac{1}{4}$	CH −2	UC −8	RI $-\frac{3}{2}$	ME 1	AQ $-\frac{1}{3}$	UA $-\frac{3}{4}$	KY $\frac{8}{5}$	ET 4	CK 3

OBJECTIVE 5–h: To find the slope of a line given two points on the line (not using the graph).

SLOPE FORMULA (PRACTICE)

Calculate the slope of the line containing the points:

1. $A(-2, 0)$ $B(0, 3)$

2. $C(2, 3)$ $D(5, 1)$

3. $E(-1, 4)$ $F(2, 5)$

4. $G(3, -2)$ $H(1, 4)$

5. $I(-1, -2)$ $J(-3, 2)$

6. $K(1, 3)$ $L(3, 1)$

7. $M(2, 4)$ $N(2, -2)$

8. $P(-3, 4)$ $Q(-2, 1)$

9. $R(4, -2)$ $S(2, -4)$

10. $T(-3, -1)U(-3, 4)$

11. $V(-2, -5)$ $W(-4, -1)$

12. $A(-3, -2)$ $B(0, -5)$

13. $C(3, -1)$ $D(-2, -1)$

14. $E\left(\frac{1}{2}, \frac{3}{2}\right)$ $F\left(\frac{3}{2}, \frac{5}{2}\right)$

15. $G\left(\frac{3}{7}, \frac{2}{3}\right)$ $H\left(\frac{1}{7}, \frac{8}{3}\right)$

16. $J(1, 5)$ $K(12, 8)$

17. $L(2, 3)$ $N(8, -1)$

18. $P(-2, -10)$ $Q(-12, -26)$

19. $R(0, -9)$ $S(15, -6)$

20. $T(5, -1)$ $U(-5, 1)$

21. $V(-30, -10)$ $W(-50, 4)$

22. $X(19, 0)$ $Y(1, 30)$

23. $A\left(\frac{1}{5}, \frac{2}{7}\right)$ $B\left(\frac{3}{5}, \frac{1}{7}\right)$

24. $C\left(-\frac{5}{6}, \frac{3}{8}\right)$ $D\left(\frac{1}{4}, -\frac{1}{2}\right)$

ANSWERS

1) $\frac{3}{2}$ **2)** $-\frac{2}{3}$ **3)** $\frac{1}{3}$ **4)** -3 **5)** -2 **6)** -1 **7)** undefined **8)** -3 **9)** 1 **10)** undefined

11) -2 **12)** -1 **13)** 0 **14)** 1 **15)** -7 **16)** $\frac{3}{11}$ **17)** $-\frac{2}{3}$ **18)** $\frac{8}{5}$ **19)** $\frac{1}{5}$ **20)** $-\frac{1}{5}$

21) $-\frac{7}{10}$ **22)** $-\frac{5}{3}$ **23)** $-\frac{5}{14}$ **24)** $-\frac{21}{26}$