

## TB(3B) Ch.8 Coordinate Geometry of Straight Lines

### Multiple Choice Questions

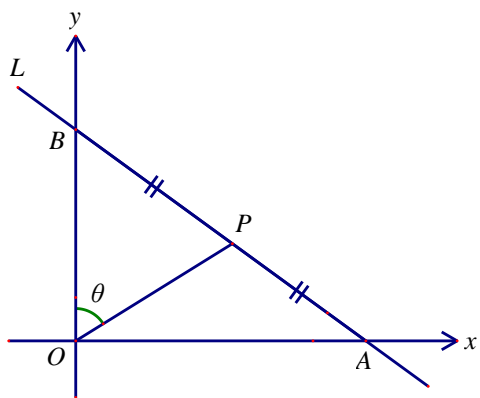
**1. [16-17 Standardized Test #5]**

The coordinates of the points  $A$  and  $B$  are  $(2, 1)$  and  $(8, 5)$  respectively. If  $C(c, 0)$  is a point lying on the  $x$ -axis such that  $AC = BC$ , then  $c =$

- A. 3.                      B. 5.  
 C. 6.                      D. 7.

**2. [16-17 Standardized Test #10]**

In the figure,  $L$  cuts the  $x$ -axis and the  $y$ -axis at  $A$  and  $B$  respectively and its slope is  $-2$ .  $P$  is the midpoint of  $AB$ . Find  $\theta$ .



- A.  $63.4^\circ$   
 B.  $53.1^\circ$   
 C.  $31.7^\circ$   
 D.  $26.6^\circ$

**3. [16-17 Final Exam #16]**

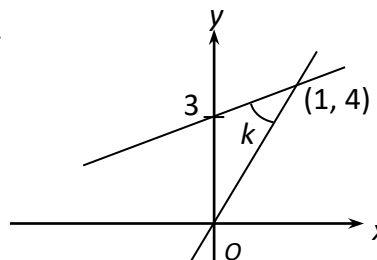
If  $A(-1, 2k+8)$ ,  $B(2, 3k+7)$  and  $C(11, -2)$  are collinear, find the value of  $k$ .

- A.  $-7$                       B.  $-1$   
 C.  $1$                         D.  $7$

**4. [16-17 Final Exam #17]**

In the figure, find  $k$  correct to 3 significant figures.

- A.  $31.0^\circ$   
 B.  $45.0^\circ$   
 C.  $46.0^\circ$   
 D.  $76.0^\circ$



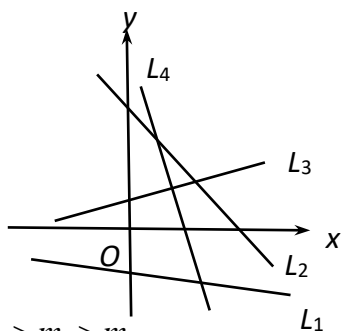
5. [17-18 S Test 2 #4]

$A(-2, 3)$ ,  $B(4, 6)$  and  $C(6, 7)$  are collinear. Find  $AB : BC$ .

- A. 1 : 3
- B. 2 : 3
- C. 3 : 1
- D. 3 : 2

6. [17-18 S Test 2 #5]

In the figure, the slopes of the straight lines  $L_1$ ,  $L_2$ ,  $L_3$  and  $L_4$  are  $m_1$ ,  $m_2$ ,  $m_3$  and  $m_4$  respectively. Arrange  $m_1$ ,  $m_2$ ,  $m_3$  and  $m_4$  in descending order.



- A.  $m_4 > m_2 > m_1 > m_3$
- B.  $m_3 > m_4 > m_2 > m_1$
- C.  $m_3 > m_2 > m_1 > m_4$
- D.  $m_3 > m_1 > m_2 > m_4$

7. [17-18 Final Exam #7]

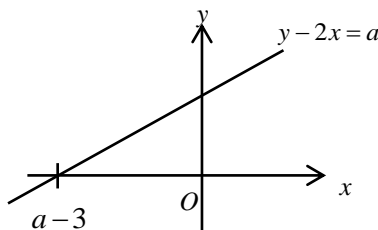
The points  $A(-8, 1)$ ,  $B(m, 2)$  and  $C(4, 5)$  are collinear. Find the value of  $m$ .

- A. -5
- B.  $-\frac{1}{3}$
- C.  $-\frac{1}{5}$
- D. 5

8. [17-18 F.2 Final Exam #14]

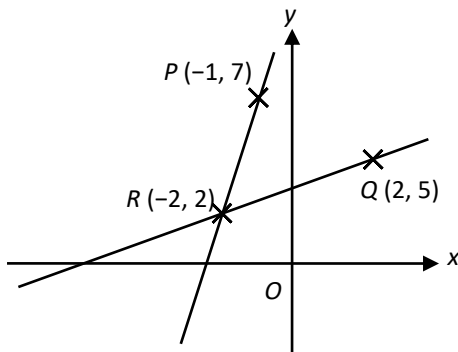
The figure shows the graph of the equation  $y - 2x = a$ . Find the value of  $a$ .

- A. 2.
- B. 1.
- C. 0.
- D. -1.



9. [17-18 Final Exam #17]

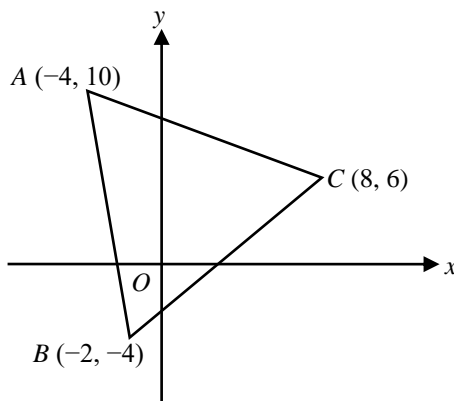
In the figure, a straight line passing through  $P(-1, 7)$  intersects another straight line passing through  $Q(2, 5)$  at  $R(-2, 2)$ . Find  $\angle PRQ$  correct to 3 significant figures.



- A.  $22.2^\circ$
- B.  $25.6^\circ$
- C.  $41.8^\circ$
- D.  $64.4^\circ$

10. [17-18 Final Exam #18]

In the figure,  $\triangle ABC$  is an isosceles triangle. Find the area of  $\triangle ABC$ .

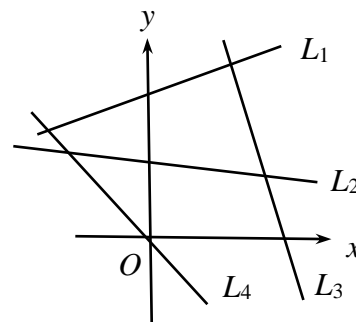


- A.  $\frac{\sqrt{150}}{2}$  sq. units
- B.  $10\sqrt{65}$  sq. units
- C.  $40\sqrt{5}$  sq. units
- D. 80 sq. units

11. [18-19 S Test 2 #6]

In the figure, the slopes of the straight lines  $L_1$ ,  $L_2$ ,  $L_3$  and  $L_4$  are  $m_1$ ,  $m_2$ ,  $m_3$  and  $m_4$  respectively.  
Arrange  $m_1$ ,  $m_2$ ,  $m_3$  and  $m_4$  in ascending order.

- A.  $m_4 < m_3 < m_1 < m_2$
- B.  $m_3 < m_4 < m_2 < m_1$
- C.  $m_4 < m_3 < m_2 < m_1$
- D.  $m_3 < m_4 < m_1 < m_2$



12. [18-19 Final Exam #9]

The points  $A(-5, -2)$ ,  $B(2, b)$  and  $C(9, -6)$  are collinear. Find the value of  $b$ .

- A.  $-4$
- B.  $-\frac{1}{4}$
- C.  $\frac{1}{4}$
- D.  $4$

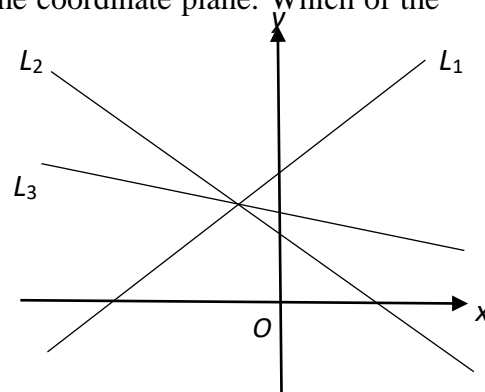
13. [18-19 Final Exam #24]

$(-2, 0)$ ,  $(0, 6)$  and  $(2, 0)$  are the vertices of a triangle. Find the coordinates of the centroid of the triangle.

- A.  $(0, 2)$
- B.  $(0, 4)$
- C.  $(2, 0)$
- D.  $(4, 0)$

14. [20-21 Standardized Test #4]

The figure shows three straight lines  $L_1, L_2$  and  $L_3$  on the same coordinate plane. Which of the following statements are correct?



- I.  $m_{L_1} > m_{L_2}$
  - II.  $m_{L_1} > m_{L_3}$
  - III.  $m_{L_2} > m_{L_3}$
- A. I and II only
  - B. I and III only
  - C. II and III only
  - D. I, II and III

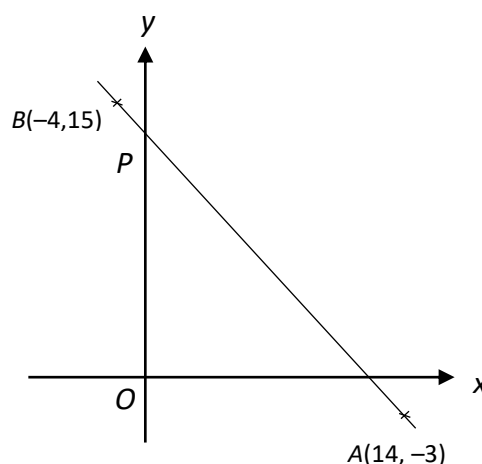
15. [20-21 Standardized Test #5]

If  $A(6, 3)$ ,  $B(3, 0)$  and  $C$  are collinear, which of the following are the possible coordinates of  $C$ ?

- A.  $(2, 1)$
- B.  $(3, 2)$
- C.  $(0, -3)$
- D.  $(-4, -1)$

16. [20-21 Standardized Test #9]

In the figure, the line joining  $A(14, -3)$  and  $B(-4, 15)$  cuts the  $y$ -axis at  $P$ . Find  $AP : PB$ .

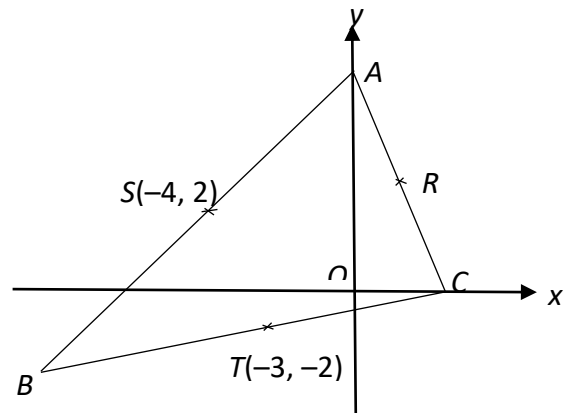


- A.  $7 : 2$
- B.  $2 : 7$
- C.  $6 : 1$
- D.  $1 : 6$

17. [20-21 Standardized Test #10]

The figure shows a triangle  $ABC$ .  $A$  and  $C$  are points on the  $y$ -axis and the  $x$ -axis respectively.  $S(-4, 2)$ ,  $T(-3, -2)$  and  $R$  are the mid-points of  $AB$ ,  $BC$  and  $AC$  respectively. Find the coordinates of  $R$ .

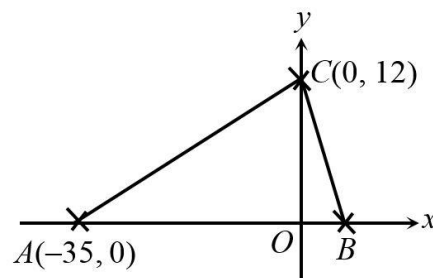
- A. (1, 2)
- B. (1, 4)
- C. (2, 4)
- D. (4, 1)



18. [20-21 Final Exam #11]

In the figure, the coordinates of the points  $A$  and  $C$  are  $(-35, 0)$  and  $(0, 12)$  respectively.  $B$  is a point on the positive  $x$ -axis. If  $AB = AC$ , then the area of  $\triangle ABC$  is

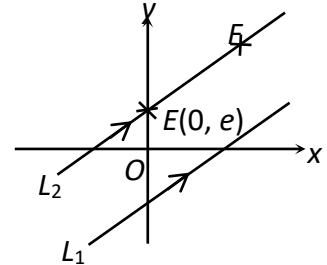
- A. 210 square units.
- B. 222 square units.
- C. 420 square units.
- D. 444 square units.



19. [20-21 Final Exam #21]

In the figure,  $L_1$  and  $L_2$  are parallel lines and slope of  $L_1$  is  $\frac{1}{2}$ .  $E$  and  $F$  are two points on  $L_2$  and the coordinates of  $E$  are  $(0, e)$ . Which of the following are the possible coordinates of  $F$ ?

- A.  $(e, 2e)$
- B.  $(e, 4e)$
- C.  $(2e, 2e)$
- D.  $(2e, 4e)$



20. [20-21 Final Exam #22]

The figure below shows four straight lines  $L_1, L_2, L_3$  and  $L_4$ . The slopes of  $L_1, L_2, L_3$  and  $L_4$  are  $m_1, m_2, m_3$  and  $m_4$  respectively. Which of the following must be true?

- I.  $m_1 > 0 > m_2$
- II.  $m_3 > m_2$
- III.  $m_4 > m_1$

- A. I and II only
- B. I and III only
- C. II and III only
- D. I, II and III

