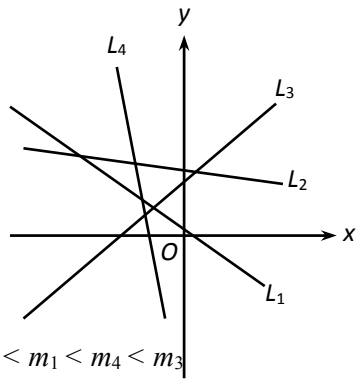
## Coordinate Geometry
## Multiple Choice Question

**1. [13-14 Standardized Test 2]**

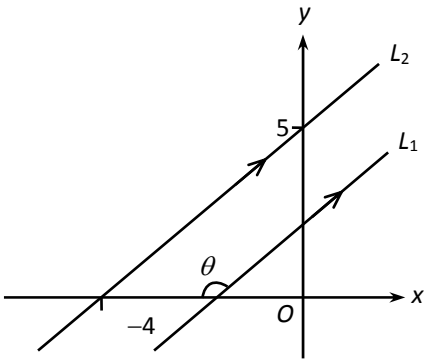
In the figure, the slopes of the straight lines $L_1$, $L_2$, $L_3$ and $L_4$ are $m_1$, $m_2$, $m_3$ and $m_4$ respectively. Arrange $m_1$, $m_2$, $m_3$ and $m_4$ in ascending order.




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

**2. [13-14 Standardized Test 2]**

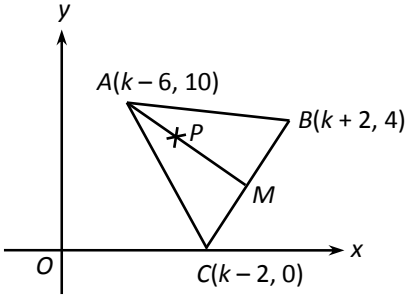
In the figure, $L_1 // L_2$. Find $\theta$.




**A.** 38.7° **B.** 51.3°
**C.** 129° **D.** 130°

**3. [13-14 Standardized Test 2]**

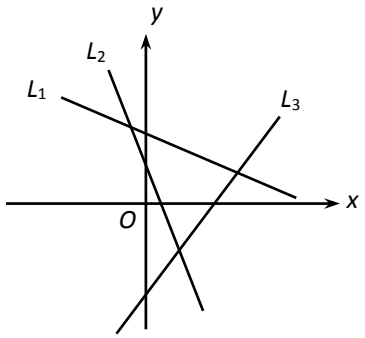
In the figure, $A(k-6,10)$, $B(k+2,4)$ and $C(k-2,0)$ are the vertices of $\Delta ABC$. $M$ is the mid-point of $BC$. $P$ is a point on $AM$ such that $AP : PM = 1 : 2$. Find the $x$-coordinate of $P$ in terms of $k$.




**A.** $k-4$ **B.** $k-2$
**C.** $\frac{3}{2}k-6$ **D.** $\frac{4}{3}k-4$

**4. [13-14 Final Exam #11]**

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




**A.** $m_3 > m_2 > m_1$

**B.** $m_3 > m_1 > m_2$

**C.** $m_2 > m_3 > m_1$

**D.** $m_1 > m_2 > m_3$

**5. [13-14 Final Exam #22]**

$M$ is a point on $AB$ such that $AM : MB = 1 : 3$. If $A$ is (–6, 5) and $M$ is (2, 9), then $B$ is

**A.** (–4, 6). **B.** (–4, 21).
**C.** (26, 6). **D.** (26, 21).

**6. [13-14 Final Exam #25]**

$A(1, 5)$, $B(3, 7)$, $C(5, 5)$ and $D(3, a)$ are the vertices of kite $ABCD$. Which of the following is/are true?

I. $a \le 5$
II. $AD = CD$
III. $AC \perp BD$

**A.** III only

**B.** I and III only

**C.** II and III only

**D.** All of the above

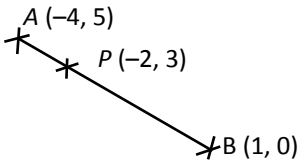
**7. [13-14 Final Exam #30]**

$E(0, -3)$, $F(m, 3)$, $G(4, 9)$ and $H(-3, n)$ are the vertices of quadrilateral $EFGH$. The slope of $HG$ is $\frac{1}{7}$ and the inclination of $EF$ is 45°. Which side of the quadrilateral is the steepest?

**A.** $EF$ **B.** $EH$
**C.** $FG$ **D.** $HG$

**8. [14-15 Standardized Test #4]**

In the figure, find $AP : PB$ .




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

**9. [14-15 Standardized Test #8]**

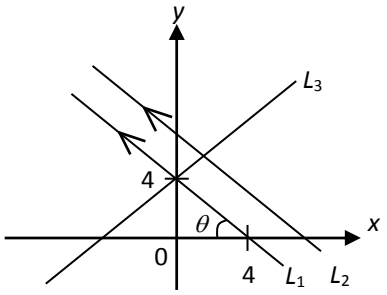
$P\left(\frac{7}{2},-\frac{1}{2}\right)$ is the mid-point of the line segment joining $A\left(a+b,-2\right)$and $B\left(a,b-a\right)$. Which of the following statements are true?

I. $b = 3$
II. $B = (2, 1)$
III. $AP : AB = 1 : 2$

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

**10. [14-15 Standardized Test #9]**

In the figure below, which of the following statements must be true?




I. tan $\theta$ = 1
II. Slope of $L_3$ > Slope of $L_2$
III. The inclination of $L_2$ is 45°.

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

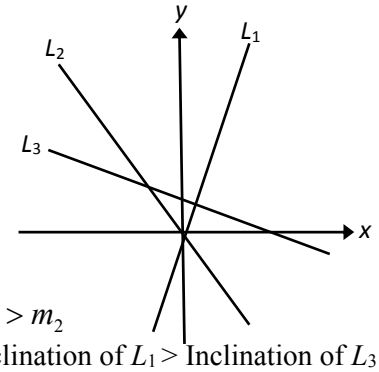
**11. [14-15 Final Exam #16]**

It is given that the distance between $A(5, –6)$ and $B(2, a)$ is 5 units. Which of the following is a possible value of $a$?

**A.** –21 **B.** –2
**C.** 2 **D.** 8

**12. [14-15 Final Exam #17]**

In the figure, the slopes of straight lines $L_1$, $L_2$ and $L_3$ are $m_1$, $m_2$ and $m_3$ respectively. Which of the following must be correct?




**I.** $m_1 > m_2$

**II.** Inclination of $L_1$ > Inclination of $L_3$

**III.** $m_3 > m_2$

**A.** I and II only **B.** I and III only

**C.** II and III only **D.** I, II and III

**13. [14-15 Final Exam #28]**

Let $O$ be the origin. The coordinates of $P$ and $Q$ are (5, 10) and (9, 8) respectively. Then the $y$-coordinate of the orthocentre of $\Delta OPQ$ is

**A.** 5. **B.** 7.

**C.** 9. **D.** 10.

**14. [15-16 Standardized Test #5]**

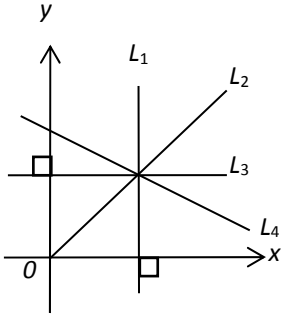
It is given that the coordinates of $A$ are $(-4, 3)$. $B$ is a point on the $y$-axis such that $\angle OAB = 90°$, where $O$ is the origin. Find the coordinates of $B$.

**A.** $(0, 5)$ **B.** $\left(-\frac{25}{4}, 0\right)$

**C.** $\left(0, \frac{4}{3}\right)$ **D.** $\left(0, \frac{25}{3}\right)$

**15. [15-16 Standardized Test #9]**

In the figure, the slopes of straight lines $L_1$, $L_2$, $L_3$ and $L_4$ are $m_1$, $m_2$, $m_3$ and $m_4$ respectively. Which of the following must be correct?




I. $m_3 < m_4$

II. $m_1 \times m_3 = -1$

III. Inclination of $L_4$ > Inclination of $L_2$

**A.** III only

**B.** I and II only

**C.** II and III only

**D.** I, II and III

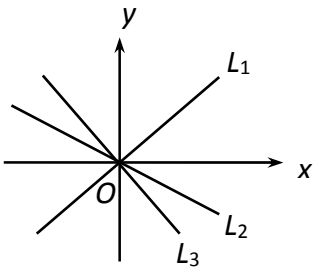
**16. [15-16 Final Exam #8]**

There are three points $A(-1, -2)$, $B(3, 0)$ and $C(9, 3)$. Find $AB : BC$.

**A.** 1 : 2 **B.** 2 : 3
**C.** 2 : 5 **D.** 3 : 2

**17. [15-16 Final Exam #25]**

In the figure, the slopes of straight lines $L_1$, $L_2$ and $L_3$ are $m_1$, $m_2$ and $m_3$ respectively. Which of the following is correct?




**A.** $m_3 < m_2 < m_1$
**B.** $m_3 < m_1 < m_2$
**C.** $m_2 < m_3 < m_1$
**D.** $m_1 < m_2 < m_3$

**18. [15-16 Final Exam #27]**

$L_1$ and $L_2$ are straight lines on a coordinate plane. $L_2$ passes through the origin and $(-4, 2)$. If $L_1 \perp L_2$, find the inclination of $L_1$.

**A.** 26.6° **B.** 45°
**C.** 63.4° **D.** 116°

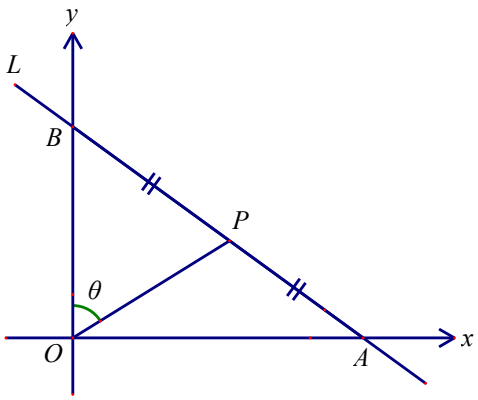
**19. [16-17 Standardized Test #5]**

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.

**20. [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 $\theta$.



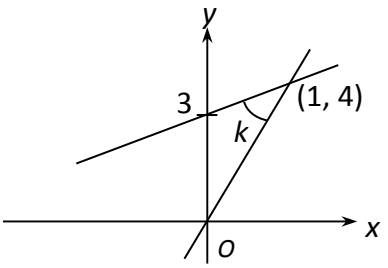

**A.** 63.4°

**B.** 53.1°
**C.** 31.7°
**D.** 26.6°

**21. [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

**22. [16-17 Final Exam #17]**
In the figure, find $k$ correct to 3 significant figures.

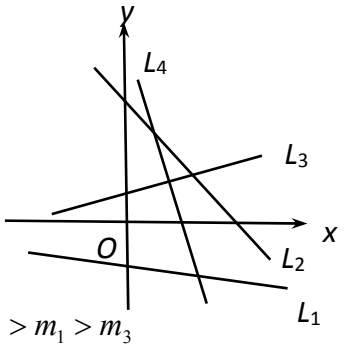



**A.** 31.0°
**B.** 45.0°
**C.** 46.0°
**D.** 76.0°

**23. [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

**24. [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.

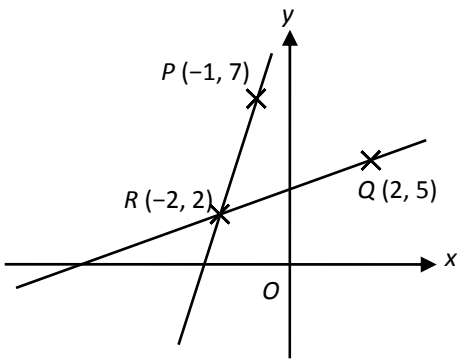



**A.** $m_4 > m_2 > m_1 > m_3$
**B.** $m_3 > m_4 > m_2 > m_1$
**C.** $m_3 > m_2 > m_1 > m_4$
**D.** $m_3 > m_1 > m_2 > m_4$

**25. [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

**26. [17-18 Final Exam #17]**

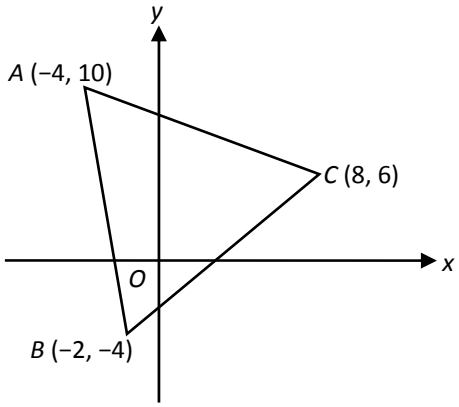
In the figure, a straight line passing through $P(-1, 7)$ intersects another straight line passing through $Q(2, 5)$ at $R(-2, 2)$. Find $\angle PRQ$ correct to 3 significant figures.




**A.** 22.2°
**B.** 25.6°
**C.** 41.8°
**D.** 64.4°

**27. [17-18 Final Exam #18]**

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




**A.** $\frac{\sqrt{150}}{2}$ sq. units

**B.** $10\sqrt{65}$ sq. units

**C.** $40\sqrt{5}$ sq. units

**D.** 80 sq. units