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Oromia Development Association Boarding School

SECOND SEMESTER GRADE 12 MATHEMATICS PRACTICE QUESTIONS

DIRECTION: THIS PAPER CONTAINS MATHEMATICS **PRACTICE QUESTIONS** FROM **GRADE 9** AND **GRADE 10** FOR GRADE 12. CHOOSE THE BEST ANSWER FROM THE SUGGESTED OPTIONS.

G-9

1. Which of the following is true?

   A. $\sqrt{17+12\sqrt{2}}-\sqrt{17-12\sqrt{2}}$ is a rational number.

   B. $\sqrt{23+8\sqrt{2}}-\sqrt{23-8\sqrt{2}}$ is an irrational number.

   C. $\dfrac{\sqrt{5+2\sqrt{6}}}{\sqrt{5-2\sqrt{6}}} \le 7$

   D. $\dfrac{\sqrt{13}+\sqrt{2}}{\sqrt{15}} \le 1$

2. If $x = 2.3124124\ldots$ and $y = -1.2143143\ldots$, then $3x+8y$ is equal to:

   A. $-\dfrac{27772}{9990}$ B. $-\dfrac{5549}{1998}$ C. $\dfrac{27772}{9990}$ D. $\dfrac{13886}{4995}$

3. Let *a*, *b* and *c* be real numbers, then which of the following is necessarily **true**?

   A. If $ac = bc$, and $a = b$.

   B. If *a* is a rational number and *b* is an irrational number, then ab is an irrational number.

   C. For each $a \in R$, there is $b \in R$ such that $ab = 1$.

   D. If $a < b$ and $c < 0$, then $ac > bc$.

4. When simplified $\dfrac{\sqrt{5-2\sqrt{6}}.\sqrt{5+2\sqrt{6}}}{\sqrt[3]{-125}}$ is equal to:

   A. $-\dfrac{\sqrt{13}}{5}$ B. $\dfrac{\sqrt{13}}{5}$ C. $\dfrac{1}{5}$ D. $-\dfrac{1}{5}$

5. If *u* and *v* are real numbers and $u > v > 0$, then what is the simplified form of $\sqrt{\dfrac{u-v}{u+v}}\sqrt{\dfrac{u^2+2uv+v^2}{u^2-v^2}}$?

   A. 1 B. $u-v$ C. $u+v$ D. $\sqrt{\dfrac{u+v}{u-v}}$

6. The simplified form of the expression $\dfrac{2\sqrt{72}}{3}-\dfrac{3\sqrt{128}}{4}+5\sqrt{\dfrac{1}{2}}$ is equal to:

   A. $18\sqrt{2}$ B. $\sqrt{2}$ C. 1 D. $\dfrac{\sqrt{2}}{2}$

1. The solution set of the equation $\left(\frac{9}{25}\right)^{x-1}\left(\frac{125}{27}\right)^{x}=\left(\frac{3}{5}\right)^{x+2}$ is:

   A. $\{2\}$ B. $\{-2\}$ C. $\{-1\}$ D. ϕ

2. In a vegetable store, one person bought 5 kg of tomato and 4 kg of onion and paid Birr 67.50. At the same time, another person bought, from the same store, 3 kg of tomato and 7 kg of onion and paid Birr 86.50. Which of the following is true?
   A. The price of tomato is Birr 10 per kg.
   B. The price of 3 kg of onion and 4 kg of tomato is Birr 52.00.
   C. 2 kg of tomato and 2 kg of onion costs more than 6 kg of tomato.
   D. The price of onion per kg is twice the price of tomato per kg.

3. Which of the following is the set of values of *k* so that the equation $kx^2+4x+2k=0$ has two distinct real roots?

   A. $\{k:k<\sqrt{2}\}$ C. $\{k:k>\sqrt{2} \text{ or } k<-\sqrt{2}\}$
   B. $\{k:-\sqrt{2}<k<\sqrt{2}\}$ D. $\{k:k<-\sqrt{2}\}$

4. Chaltu bought 7 pens and 10 pencils for Birr 22 and Semira bought similar 10 pens and 5 pencils for Birr 17 and 50 cents from the same shop. What are the respective price of a pen and a pencil in Birr?
   A. 1.50 and 0.50 C. 1.10 and 1.40
   B. 1.40 and 1.22 D. 1.00 and 1.50

5. Let *a* and *b* be non-zero real numbers, and *m* and *n* be positive integers. Which of the following is **true**?

   A. $\frac{a^n}{a^{-m}}=a^{m+n}$ B. $a^m.a^{-n}=^{-mn}$ C. $\left(a^n\right)^m=a^{n+m}$ D. $\left(a^n+b^n\right)=a^n+b^n$

6. A business woman had invested 30,000 Birr on two business sectors. She had invested part of money (x Birr) on one sector at 10% return and the rest of the money (y Birr) on the other sector at 5% return. If she received a total of 2,300 Birr in return on the total investment, then which of the following systems of linear equations describes this situation?

   A. $\begin{cases}x+y=30{,}000\\2x+y=46{,}000\end{cases}$ B. $\begin{cases}x+y=30{,}000\\10x+5y=2{,}300\end{cases}$ C. $\begin{cases}x+y=32{,}300\\2x+y=6{,}900\end{cases}$ D. $\begin{cases}x+y=32{,}300\\2x+y=64{,}600\end{cases}$

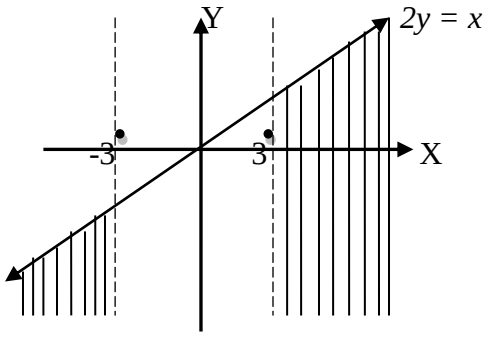
7. If A and B are subsets of the universal set U, then which of the following is **NOT** necessarily true?
   A. If $A' \subseteq B$, then $A \cap B = \emptyset$ C. If $A' \cap B' = \emptyset$, then $A \cup B = U$
   B. If $A' \subseteq B'$, then $B \subseteq A$ D. If $A' \cup B' = U$, then $A \cap B = \emptyset$

8. The number of subsets of the set {*x: x is an even integer and* $-1 \le x \le 3$ } is :
   A. 4 B. 2 C. 8 D. 32

9. Let the universal set U be the set of positive integers and let set $S=\{x \in U \mid x$ is prime number and $x^2 \le 30\}$. Which one of the following sets is equal to set S?
   A. {4,9,25} C. {2,3,5}
   B. {2,3,5,7,11,13,17,19,23,29} D. {4,9,16,25}

10. Given three sets X, Y and Z, then which of the following statements is **NOT** true about them?
    A. If $X \cap Y = \{\}$, then $Y \backslash X = Y$. C. If $X \cap Y \neq \{\}$ and $X \cap Z = \{\}$, then $X \cap Y \cap Z = \{\}$.
    B. If $X \cap Y = \{\}$, then $X \backslash Y \subseteq X$. D. If $X \cap Y = Y$, then $Y \subset X$.

11. The figure shown below is the graphical representation of a relation.



Which of the following represent the shaded region?

A. $\{(x,y): y \le \frac{x}{2} \text{ and } |x| \ge 3\}$
C. $\{(x,y): y \ge \frac{x}{2} \text{ and } x < -3\}$
B. $\{(x,y): y \le \frac{x}{2} \text{ and } |x| > 3\}$
D. $\{(x,y): y \le \frac{x}{2} \text{ and } x > 3\}$

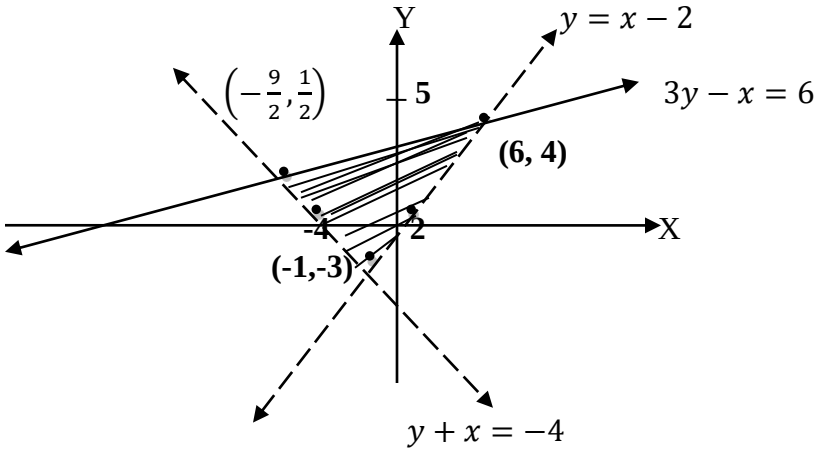
12. Which one of the following is **FALSE** about the quadratic function $y = 2(x-3)^2 + 5$?

A. Its graph has vertex (-3, 5).
C. Its domain is the set of real numbers.
B. Its graph is symmetric with respect to the line $x = 3$
D. $y \ge 5$ for every x in the domain.

13. Which one of the following is **NOT** true about the graph of the function $f(x) = ax^2 + c, a \neq 0$?

A. It is symmetric with respect to the line $x = 0$.
C. It lies above the x-axis for all $a > 0$.
B. It is a parabola which opens upward if $a > 0$.
D. It is a parabola with vertex (0, c).

14. As shown in the figure below the shaded region is formed by three interesting lines.



Which of the following systems of linear inequalities algebraically describes the above shaded region?

A. $\begin{cases} 3y \le x+6 \\ y > -x-4 \\ y > x-2 \end{cases}$
B. $\begin{cases} 3y \le x-6 \\ y > -x+4 \\ y \ge -x+2 \end{cases}$
C. $\begin{cases} 3y \le x+6 \\ y < -x+2 \\ y > x-4 \end{cases}$
D. $\begin{cases} 3y \le x-6 \\ y > x-2 \\ -y > x+4 \end{cases}$

15. The graph of a quadratic function f given by $f(x) = ax^2 + b$ lies above the x-axis, whenever:

A. both a and b are positive.
C. a and b have opposite signs.
B. a is greater than b.
D. both a and b are negative.

16. A quadratic function *f* is given by $2x^2+3x+1$. Which one of the following statements is **correct** about the graph of this function?

A. It is symmetric about y-axis.

B. It is increasing on the interval $\left[-\frac{3}{2},\infty\right)$.

C. It is increasing on the interval $\left[-\infty,-\frac{3}{4}\right)$.

D. It crosses y-axis at exactly one point.

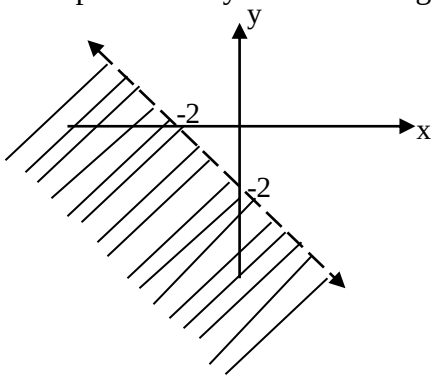
17. Which one of the following relations is represented by the shaded region shown on the figure below?

A. $\{(x,y): y < x-2\}$

B. $\{(x,y): y > -x-2\}$

C. $\{(x,y): y > x-2\}$

D. $\{(x,y): y < -x-2\}$



18. The sides of a polygon P_0 have lengths $6,10,12,18$ and 34 units. If the perimeter of polygon P_1 that is similar to P_0 is 40 units, then which of the following is **NOT** true about the polygon P_1 ?

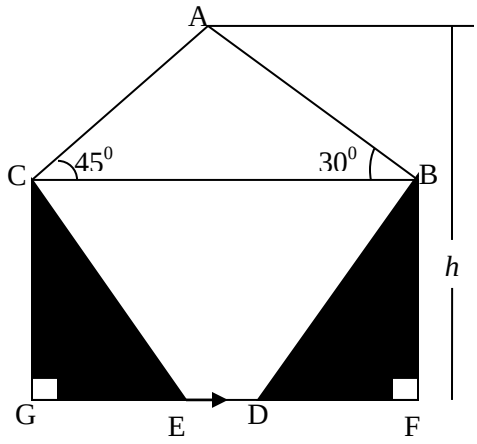
A. It has a side of length 6 units.

B. Its longest side is five times the shortest side.

C. If the area of P_0 is x sq. units, then the area of P_1 is $\frac{x}{4}$ *sq.units.*

D. Its shortest side is 3 units long.

19. In the figure below, $AB=6cm,\ ED=\left(6-3\sqrt{3}\right)cm,\ h=9cm$ and $\overleftrightarrow{ED}\parallel\overleftrightarrow{BC}$, then which of the following is **NOT** true?



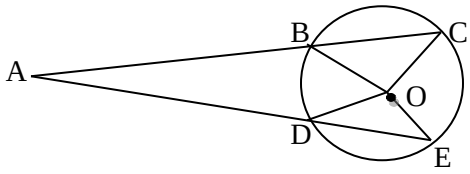
A. Area of ΔABC is $\frac{9}{2}\left(\sqrt{3}+1\right)cm^2$.

B. Area of quadrilateral BDEC is $27cm^2$.

C. Area of the shaded region is $9\left(2\sqrt{3}-1\right)cm^2$.

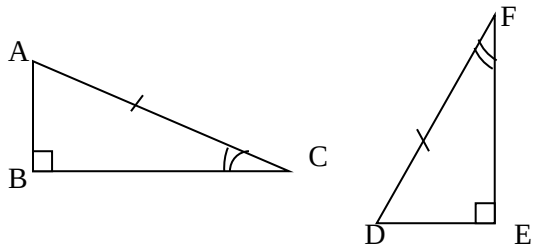
D. Area of quadrilateral ABDC is $\frac{9}{2}\left(\sqrt{3}+7\right)cm^2$.

20. In the circle shown below, $m(< COE) = 126^0$ and $m(< BOD) = 56^0$, Find the measure of $< DAB$.



A. 70^0
B. 35^0
C. 28^0
D. 56^0

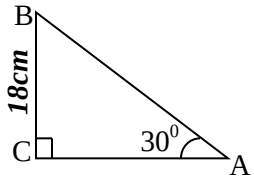
21. Given two right triangles with labels as shown below, which congruent theorem can be cited so that $\Delta ABC \equiv \Delta DEF$?



A. HL
B. LL
C. HA
D. RHS

22. Which of the following statements states the Isosceles Triangle Theorem?
    A. The altitude of an isosceles triangle bisects the vertex angle.
    B. The altitude of an isosceles triangle bisects the base.
    C. The angles opposite to the congruent sides of a triangle are congruent.
    D. The sides opposite to the congruent angles of a triangle are congruent.

23. For the right angle triangle given below if $BC = 18cm$ and $m(< A) = 30^0$, then how is $\overline{AC}$?



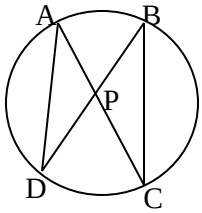
A. $36cm$
B. $18\sqrt{3}cm$
C. $18\sqrt{2}cm$
D. $\frac{18}{\sqrt{3}}cm$

24. An Isosceles triangle has base side 10cm long and a vertex angle of 60^0.How long is the altitude from the vertex angle?

A. $\frac{10}{3}\sqrt{3}cm$ B. $\frac{5}{3}\sqrt{3}cm$ C. $10\sqrt{3}cm$ D. $5\sqrt{3}cm$

25. In the circle below, chords $\overline{AC}$ and $\overline{DB}$ intersect at a point P inside the circle, if $m(< DAC) = 35^0$ and $m(< ACB) = 30^0$, then find $m(< APB)$.

A. 70^0
B. 65^0
C. 55^0
D. 60^0



26. For a given right circular cylinder, its height is twice the diameter of the base. If the lateral surface area of this cylinder is 288π square inches, then what is its volume?

A. $864\sqrt{2}\pi \ in^3$ C. $115\sqrt{28.8}\pi \ in^3$
B. $512\sqrt{2}\pi \ in^3$ D. $864\pi \ in^3$

27. Given the scores of ten students as 3,2,3,4,3,5,6,7,2,5; then the variance of the score is:

A. $\sqrt{1.4}$ B. 1.4 C. $\sqrt{2.6}$ D. 2.6

28. In the theory of probability an event is

A. any element of the probability set.

B. a number of successes in a trial divided by the number of trials.

C. the set of all possible outcomes of an experiment.

D. any subset of the possibility set.

29. The variance of a numerical data is

A. the square of the median.

B. the square of the standard deviation.

C. the square of the mean.

D. the square of the median deviation.

30. In a certain town the monthly average number of car accident recorded for first six months of the year 2005 E.C., was given as follows:

Month	**1st**	**2nd**	**3rd**	**4th**	**5th**	**6th**
N^{o} of Car Accident	8	4	6	2	6	4

The Traffic Police Department of the town planned reduces the accident by 25% for the first six months of the year 2006 E.C. Which of the following is **NOT** true?

A. The standard deviation of accidents estimated for the first six months of the year 2006 E.C. will be $\frac{1}{4}\sqrt{\frac{11}{3}}$.

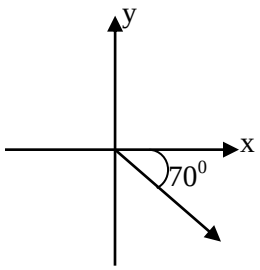
B. The mean number of accidents for the first six months of the year 2005 E.C. was 5.

C. The standard deviation of the number of accidents for the first six months of the year 2005 E.C. was $\sqrt{\frac{11}{3}}$.

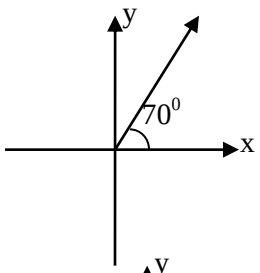
D. The mean number of accidents estimated for the six months of the year 2006 E.C. will be 3.75.

31. Which one of the following diagrams represents a vector with direction E70^0N?

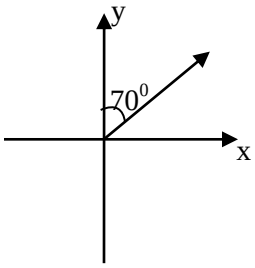
A.



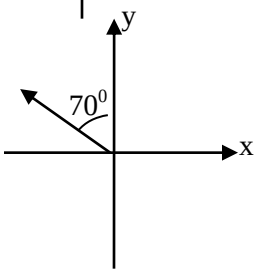
C.



B.



D.



32. From the following pairs of vectors, which pair has vectors that are parallel to each other?

A. $\vec{u} = 2i + j$ and $\vec{v} = -i + 2j$

B. $\vec{u} = 2i + 3j$ and $\vec{v} = 4i + 3j$

C. $\vec{u} = -5i + 2j$ and $\vec{v} = \frac{1}{2}i - \frac{1}{5}j$

D. $\vec{u} = 3j$ and $\vec{v} = \frac{1}{3}i$

33. If U is vector in the direction as vector $\vec{v} = (-3,4)$ having length 3 times the length of $\vec{v}$, what is the length of the vector $\vec{u} - \frac{3}{2}\vec{v} - 2\vec{j}$ where j is the unit vector in the direction of the positive *y*-axis?

A. $\frac{17}{2}$ B. $\frac{1}{2}\sqrt{185}$ C. $\frac{21}{2}$ D. $\frac{1}{2}\sqrt{145}$

34. Let **A** and **B** be two vectors given by $A = 3i - 2j$ and $B = 5i - \frac{1}{2}j$, then the vector $\frac{1}{2}A - \frac{2}{3}B =$ ___

A. $8i - \frac{3}{2}j$ B. $-\frac{11}{6}i - \frac{4}{3}j$ C. $-\frac{29}{6}i - \frac{4}{3}j$ D. $-\frac{11}{6}i - \frac{2}{3}j$

35. If $\vec{A} = (3,-3)$ and $\vec{B} = \vec{i} - 3\vec{j}$, what is the unit vector in the direction of $\vec{C} = 3\vec{A} - \vec{B}$?

A. $\left(\frac{1}{\sqrt{2}}, -\frac{1}{\sqrt{2}}\right)$ B. $\left(\frac{4}{5}, -\frac{3}{5}\right)$ C. $\left(-\frac{6}{10}, \frac{8}{10}\right)$ D. $\left(\frac{1}{\sqrt{10}}, -\frac{3}{\sqrt{10}}\right)$

G-10

36. Suppose $x = \log_2 m$ and $y = \log_2 n$. Then which of the following rules is the consequence of the power rule $2^{x+y} = 2^x 2^y$?

A. $\log_2 mn = \log_2 m + \log_2 n$ C. $\log_2 (m+n) = \log_2 m + \log_2 n$

B. $\log_2 m^n = n \log_2 m$ D. $\log_2 m \log_2 n = \log_2 m + \log_2 n$

37. Suppose $m = a^y, n = a^z$ and $n = m^t$. Then t equal to:

A. $\log_n m \log_m n$ C. $n \log_a m$

B. $\log_a m \log_a n$ D. $\frac{\log_a n}{\log_a m}$

38. $\mathbf{A = Pe^{rt}}$ is the formula for the amount (**A**) of money accumulated, where **P** is the principal invested with annual interest rate ***r*** compounded annually for ***t*** years. Which one of the following expressions gives the time that is required to double the money invested?

A. $\ln \sqrt{2}\, \boldsymbol{r}$ B. $\ln\left(\frac{2}{r}\right)$ C. $\ln\left(\frac{r}{2}\right)$ D. $\frac{\ln r}{2}$

39. Suppose $\log_3 2 = a$ and $\log_3 5 = b$. Then $\log_3 0.0002$ is equal to:

A. $-3a - 4b$ B. $3a + 4b$ C. $a - b$ D. $b - 3a$

40. The solution set of $\log_2[3 + \log_4(x+4)] = 0$ is equal to:

A. $\left\{\frac{63}{16}\right\}$ B. $\left\{\frac{1}{4}\right\}$ C. $\left\{-\frac{63}{16}\right\}$ D. $\{-3\}$

41. What is the solution set of $\log(8x^3) - \log(4x) \geq \log x$?

A. $(-\infty, 0) \cup \left[\frac{1}{2}, \infty\right)$ C. $(-\infty, 0) \cup \left(\frac{1}{2}, \infty\right)$

B. $(0, \infty)$ D. $\left[\frac{1}{2}, \infty\right)$

42. Which of the following is the solution set of the inequality $\frac{37-2x}{3}+x\le\frac{3x-8}{4}-9$?

A. $\{x\in\Re : x\le 56\}$ C. $\emptyset$

B. $\{x\in\Re : x\ge -56\}$ D. $\{x\in\Re : 56\le x\}$

43. The solution set of the inequality $|y+3|<1$ is

A. $(-4,-3)$ B. $(-4,-2)$ C. $(-3,0)$ D. $(-\infty,-2)\cup(-2,\infty)$

44. The solution set of $-6<11x+3\le 3$ is

A. $\left\{x:-\frac{9}{11}\le x<\frac{6}{11}\right\}$ C. $\left\{x:-\frac{9}{11}\le x\le 0\right\}$

B. $\left\{x:-\frac{9}{11}\le x<0\right\}$ D. $\left\{x:-\frac{9}{11}\le x\le\frac{6}{11}\right\}$

45. The solution set of $-5\le x+2<6$ can be given as;

A. $[-3,8)$ B. $[-7,8)$ C. $[-5,6)$ D. $[-7,4)$

46. Find the solution set for $2x(4-x)\ge 0$.

A. $[0,4]$ C. $(-\infty,0]\cup[4,\infty)$

B. $(-\infty,-4]\cup[0,\infty)$ D. $[-4,0]$

47. The solution set of $|2-3x|>1$can be given by:

A. $\left(\frac{1}{3},1\right)$ B. $\left(-\infty,\frac{1}{3}\right)\cup(1,\infty)$ C. $\{\ \}$ D. $\left[\frac{1}{3},1\right]$

48. From the following equations, which one is the equation of the line through the points P (-1, -2) and Q (3, 1)?

A. $y-2=\frac{3}{4}(x-1)$ C. $y-2=-\frac{1}{2}(x-1)$

B. $y+2=\frac{3}{4}(x+1)$ D. $y+2=-\frac{1}{2}(x-1)$

49. Which one of the following pairs of equations represents perpendicular lines?

A. $x+y=0$ and $-x+y=1$

B. $2x+y=1$ and $-2x-y=1$

C. $x+y=1$ and $y-2x=2$

D. $3x-2y=0$ and $3x+2y=2$

50. What is the coordinate of the point R on the line segment with end points P(-3, 0) and Q(0, -3) such that $\frac{PR}{RQ}=\frac{2}{3}$?

A. $(-1,-1)$ B. $\left(-1,\frac{7}{5}\right)$ C. $\left(-\frac{9}{5},-\frac{6}{5}\right)$ D. $\left(-\frac{7}{5},0\right)$

51. Let (a,b) and (b,a) be points such that $a\ne b$. Which of the following is the equation of the line through (a,b) and perpendicular to the line containing the given points?

A. $y=x+b-a$ C. $y=-x+b+a$

B. $y=x-a-b$ D. $y=-x-a+b$

52. The distance between P (2,3) and Q (1, -1) is:

A. 17 units B. 16 units C. $\sqrt{17}$ units D. 9 units

53. The equation straight line passing through P (-2, 1) and perpendicular to the line with equation $6x+5y=10$ is:

A. $6y+5x+16=0$ C. $y=5x-10$

B. $6y-5x+16=0$ D. $6y-5x-16=0$

54. If P (2, -1) and Q (-3, 5) are points on the coordinates plane, so that, P is the midpoint of $\overline{QR}$, then what are the coordinates of R?

A. (7, 7) B. (7, -7) C. (6, 7) D. (10, 11)

55. Which of the following **NOT** true?

A. If $\sin^2\theta+3\cos^2\theta=4$, then $\tan\theta=\frac{1}{\sqrt{3}}$. C. If $\tan\theta=\frac{4}{5}$, then $\frac{2\sin\theta+3\cos\theta}{4\cos\theta+3\sin\theta}=\frac{23}{32}$.

B. If $\sec\theta=\frac{27}{19}$, then $\tan\theta=\frac{4\sqrt{23}}{19}$. D. None of the above.

56. If $\sin 110^0\cos 20^0=x$, then $\sin 20^0\cos 110^0$ equals

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

57. Which of the following is equivalent to $\csc\frac{11}{3}\pi$?

A. -2 B. $\frac{-2\sqrt{3}}{3}$ C. 2 D. $\frac{2\sqrt{3}}{3}$

58. $\tan 1410^0=$ _____

A. $-\frac{\sqrt{3}}{3}$ B. $\frac{1}{2}$ C. $\frac{\sqrt{3}}{2}$ D. $-\frac{1}{2}$

59. $\csc 240^0=$ _____

A. -2 B. $-\frac{2\sqrt{3}}{3}$ C. $-\sqrt{3}$ D. $-\frac{\sqrt{2}}{2}$

60. If $f(x)=\cos x$, then which one of the following is **true** about this function?

A. Domain of f is $\{x:-1\le x\le 1\}$ C. The period of f is π

B. Range of f is $[-1,1]$ D. f is an odd function

61. Two buildings A and B on a level ground are 6 meters apart. As seen from the top of building A that is 10 meters high, the angle of elevation of the top of the building B is 30^0. How high is the building B in meters?

A. $10+2\sqrt{3}$ B. $10+3\sqrt{3}$ C. $3\sqrt{3}$ D. $2\sqrt{3}$

62. If $\alpha=-190^0$, then which of the following is true about the signs of $\sin\alpha$ and $\tan\alpha$?

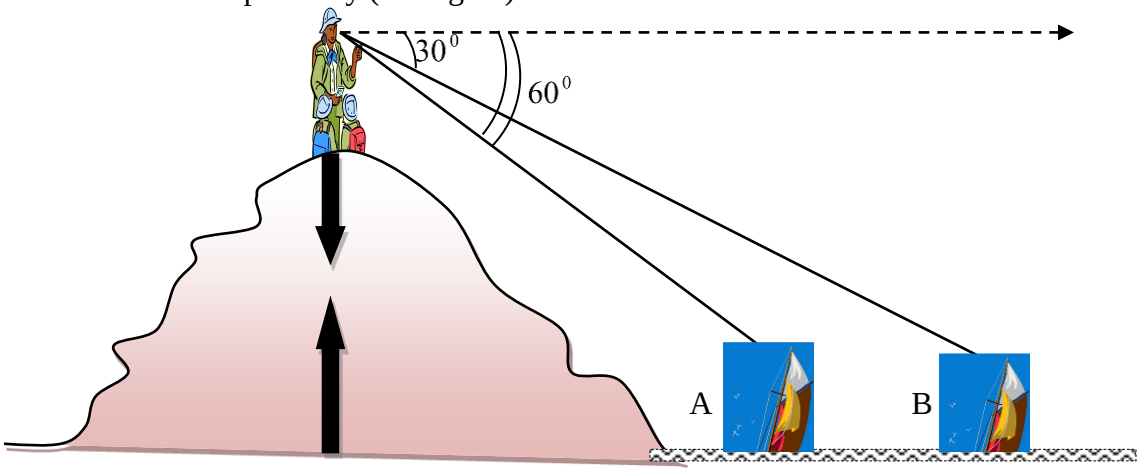
A. $\sin\alpha$ is negative and $\tan\alpha$ is positive C. both $\sin\alpha$ and $\tan\alpha$ are positive

B. $\sin\alpha$ is positive and $\tan\alpha$ is negative D. both $\sin\alpha$ and $\tan\alpha$ are negative

63. Suppose $\cos\theta=0.8$ and $\csc\theta<0$, then $\tan\theta$ is equal to:

A. $\frac{3}{5}$ B. $-\frac{3}{4}$ C. $\frac{4}{5}$ D. $-\frac{4}{3}$

64. A woman was at the top of a cliff that is 100 meters above sea level as shown on the figure below. When she saw two boats A and B sailing away from the cliff due east, the angles of depression to boats A and B were 60^0 and 30^0 respectively (see figure).



What was the distance between the two boats when she saw them?

A. $\frac{200}{3}\sqrt{3}$ *meters*

B. $\frac{100}{3}\sqrt{3}$ *meters*

C. $100\sqrt{3}$ *meters*

D. $200\sqrt{3}$ *meters*

65. Which of the following statements is **NOT** true about the function $y = \cos t$?

A. Its graph intersects the line $y = t$

B. It is increasing on the interval $(\pi, 2\pi)$

C. Its graph intersects the t axis at $\left(\frac{7}{2}\pi, 0\right)$

D. It forms one cycle in the interval $\left[-\frac{\pi}{2}, \frac{\pi}{2}\right]$

66. Which of the following is true about the secant function $f(x) = \sec x$?

I. Domain of f is $\mathbb{R} \setminus \{\frac{m\pi}{2} :$ m is an odd integer$\}$

II. Range of f is $\mathbb{R}$

III. $f(x) = \frac{1}{\cos x}$

IV. Domain of f is $\mathbb{R} \setminus \{m\pi :$ m is an odd integer$\}$

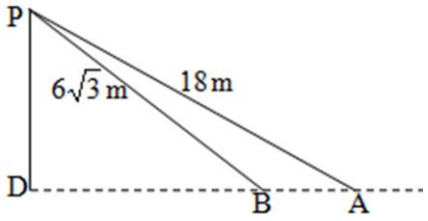
A. III and IV only

B. I and III only

C. I only

D. I and II only

67. From the top of the tower PD which is 9m tall, points A and B are on a horizontal ground at distances of 18m and $6\sqrt{3}$ m respectively. If A, B, D and P are in the same vertical plane, then what is the measure of $< BPA$?



A. 35^0

B. 70^0

C. 30^0

D. 60^0

68. From a point on the ground, which is 100 meters away from the wall of a building, the angle of elevation of the top of building is 72^0. What is the height of the building?

A. $100\tan 72^0$ meters

B. $100\cos 72^0$ meters

C. $\dfrac{100}{\tan 72^0}$ meters

D. $100\sin 72^0$ meters

69. Which of the following angles is conterminal with $\theta = 120^0$?

A. -480^0 B. 850^0 C. $-\dfrac{19}{6}\pi$ D. $\dfrac{14}{3}\pi$

70. From the following expressions which one is equivalent to $\sin\left(-\dfrac{7\pi}{6}\right)$?

A. $\sin\left(\dfrac{5\pi}{6}\right)$ B. $-\sin\left(\dfrac{\pi}{6}\right)$ C. $\sin 30^0$ D. $\sin 45^0$

Practice and again practice!