

Coahoma County Jr-Sr High School

11th-12th Grade Math

Week 2

March 30, 2020

15. If $3^x = 54$, then which of the following must be true?
- A. $1 < x < 2$
 - B. $2 < x < 3$
 - C. $3 < x < 4$
 - D. $4 < x < 5$
 - E. $5 < x$
16. What is the least common multiple of 70, 60, and 50 ?
- F. 60
 - G. 180
 - H. 210
 - J. 2,100
 - K. 210,000
17. Hot Shot Electronics is designing a packing box for its new line of Acoustical Odyssey speakers. The box is a rectangular prism of length 45 centimeters, width 30 centimeters, and volume 81,000 cubic centimeters. What is the height, in centimeters, of the box?
- A. 75
 - B. 60
 - C. 48
 - D. 27
 - E. 18
18. Four points, A , B , C , and D , lie on a circle having a circumference of 15 units. B is 2 units counterclockwise from A . C is 5 units clockwise from A . D is 7 units clockwise from A and 8 units counterclockwise from A . What is the order of the points, starting with A and going clockwise around the circle?
- F. A, B, C, D
 - G. A, B, D, C
 - H. A, C, B, D
 - J. A, C, D, B
 - K. A, D, C, B
19. A group of cells grows in number as described by the equation $y = 16(2)^t$, where t represents the number of days and y represents the number of cells. According to this formula, how many cells will be in the group at the end of the first 5 days?
- A. 80
 - B. 160
 - C. 400
 - D. 512
 - E. 1,280

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20. The length of a rectangle is 3 times the length of a smaller rectangle. The 2 rectangles have the same width. The area of the smaller rectangle is A square units. The area of the larger rectangle is kA square units. Which of the following is the value of k ?

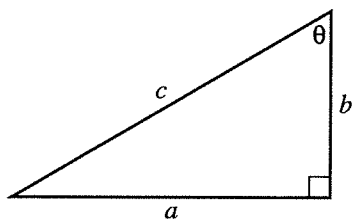
- F. $\frac{1}{9}$
 G. $\frac{1}{3}$
 H. 1
 J. 3
 K. 9

21. $(a + 2b + 3c) - (4a + 6b - 5c)$ is equivalent to:

- A. $-4a - 8b - 2c$
 B. $-4a - 4b + 8c$
 C. $-3a + 8b - 2c$
 D. $-3a - 4b - 2c$
 E. $-3a - 4b + 8c$

22. The dimensions of the right triangle shown below are given in feet. What is $\sin \theta$?

- F. $\frac{a}{b}$
 G. $\frac{a}{c}$
 H. $\frac{b}{c}$
 J. $\frac{b}{a}$
 K. $\frac{c}{a}$



23. In a basketball passing drill, 5 basketball players stand evenly spaced around a circle. The player with the ball (the passer) passes it to another player (the receiver). The receiver cannot be the player to the passer's immediate right or left and cannot be the player who last passed the ball. A designated player begins the drill as the first passer. This player will be the receiver for the first time on which pass of the ball?

- A. 4th
 B. 5th
 C. 6th
 D. 10th
 E. 24th

24. Lines p and n lie in the standard (x, y) coordinate plane. An equation for line p is $y = 0.12x + 3,000$. The slope of line n is 0.1 greater than the slope of line p . What is the slope of line n ?

- F. 0.012
 G. 0.02
 H. 0.22
 J. 1.2
 K. 300

25. The expression $-8x^3(7x^6 - 3x^5)$ is equivalent to:

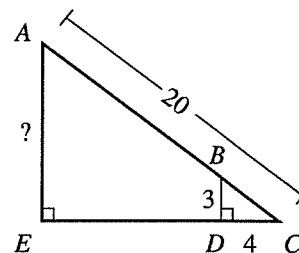
- A. $-56x^9 + 24x^8$
 B. $-56x^9 - 24x^8$
 C. $-56x^{18} + 24x^{15}$
 D. $-56x^{18} - 24x^{15}$
 E. $-32x^4$

26. $-3|-6 + 8| = ?$

- F. -42
 G. -6
 H. -1
 J. 6
 K. 42

27. In right triangle $\triangle ACE$ below, \overline{BD} is parallel to \overline{AE} , and \overline{BD} is perpendicular to \overline{EC} at D . The length of \overline{AC} is 20 feet, the length of \overline{BD} is 3 feet, and the length of \overline{CD} is 4 feet. What is the length, in feet, of \overline{AE} ?

- A. 10
 B. 12
 C. 15
 D. 16
 E. 17



28. As part of a lesson on motion, students observed a cart rolling at a constant rate along a straight line. As shown in the chart below, they recorded the distance, y feet, of the cart from a reference point at 1-second intervals from $t = 0$ seconds to $t = 5$ seconds.

t	0	1	2	3	4	5
y	14	19	24	29	34	39

Which of the following equations represents this data?

- F. $y = t + 14$
 G. $y = 5t + 9$
 H. $y = 5t + 14$
 J. $y = 14t + 5$
 K. $y = 19t$