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1. Find the GCF of 60 and 68 [214]

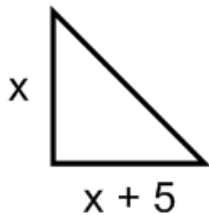
A. 2
 B. 4
 C. 6
 D. 8
 E. 12

2. The volume of a right circular cone can be found with the following formula: $v = \frac{1}{3}\pi r^2 h$. If your ice cream cone can hold 150 cubic centimeters and has a height of 8 cm. What is the radius, to the nearest cm, of the cone. [215]

F. 2
 G. 3
 H. 4
 J. 5
 K. 6

3. Find the hypotenuse of this right triangle in terms of x. [216]

A. $\sqrt{2x + 5}$
 B. $\sqrt{2x^2 + 5}$
 C. $\sqrt{x^2 + x + 5}$
 D. $\sqrt{x^2 + (x + 5)^2}$
 E. $\sqrt{2x^2 + 25}$



4. Find the distance between these two points on the coordinate plane. (-2,5) and (7,-3) [217]

F. 12
 G. $\sqrt{145}$
 H. $\sqrt{72}$
 J. $\sqrt{29}$
 K. $\sqrt{17}$

5. Find the midpoint between these two points on the coordinate plane. (-2, 5) and (8, 9) [218]

A. (6, 14)
 B. (3, 4)
 C. (3, 7)
 D. $(3, \frac{5-2}{2})$
 E. $(-4, \frac{9}{5})$

6. Bob is going to rent a chainsaw. There are two options for rental. One is \$15 plus \$5 per hour and the other is \$25 plus \$1 per hour. What amount of time would cause the rate to be the same under either plan? [219]

F. 3
 G. 2.5
 H. 2
 J. 1.5
 K. 1

7. Find the LCM of 20, 25 and 30? [220]

A. 75
 B. 80
 C. 120
 D. 300
 E. 500

8. In the complex number system it is understood that $i^2 = -1$. Given that, what is the product of $3+5i$ and $8-2i$? [221]

F. $34+34i$
 G. $34-34i$
 H. $48i$
 J. $14+34i$
 K. 0

9. How many diagonals does a hexagon have?
[230]

- A. 8
- B. 9
- C. 10
- D. 11
- E. 12

10. The secret puzzle combination is found by adding the following matrices and then tripling the result. What is the combination?
 $[2, 3, 7] + [1, 0, -2]$? [223]

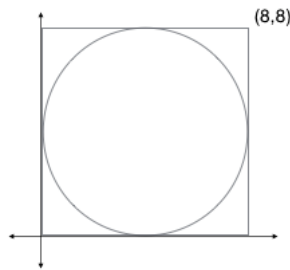
- F. [2,3,9]
- G. [3,3,5]
- H. [3,3,9]
- J. [9,9,15]
- K. [9,9,9]

11. Jon has gotten the following test scores so far, 100, 97, 90, and 89. What does he need to get on his next test in order to average exactly a 95 [231]

- A. 101
- B. 100
- C. 99
- D. 98
- E. 97

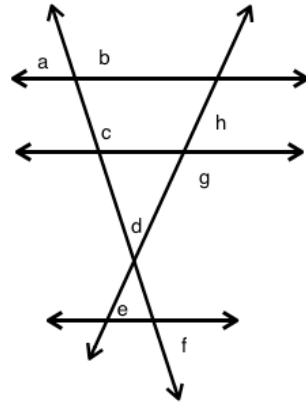
12. What is the formula for the circle pictured below. [225]

- F. $(x + 8)^2 - (y + 8)^2 = 16$
- G. $(x - 4)^2 + (y - 4)^2 = 64$
- H. $(x + 4)^2 + (y - 4)^2 = 8$
- J. $(x + 4)^2 + (y - 4)^2 = 16$
- K. $(x - 4)^2 + (y - 4)^2 = 16$



13. None of the lines below are parallel. Which of the following combinations is NOT equal to 180° ? [226]

- A. $a + b$
- B. $h + g$
- C. $d + e + f$
- D. $a + c$
- E. none of the above



14. If you multiply a number by two and subtract 4 it is the same result as if you had tripled the number and subtracted 16. What is the number? [227]

- F. 12
- G. 13
- H. 14
- J. 15
- K. 16

15. Which of the following are equal to $10x^3y^3z^5 + 25x^3y^4z^7 - 20x^2y^6z^9$ [228]

- A. $5(2x^3y^3z^5 + 5x^3y^4z^7 - 10x^2y^6z^9)$
- B. $5x^3y^3z^5(2 + 5y^1z^2 - 4y^6z^9)$
- C. $5x^2(10x^1y^3z^5 + 5x^1y^2z^7 - 4y^6z^9)$
- D. $5x^2y^3z^5(2xyz^4 + 5xy^1z^6 - 4y^3z^8)$
- E. $5x^2y^3z^5(2x + 5xyz^2 - 4y^3z^4)$

16. The inequality $|x - 5| \leq 6$ yields which of the following solution sets? [232]

- A. $x \leq 11$
- B. $x \leq 1$
- C. $x \geq 11$ and $x \leq -1$
- D. $x \leq -1$
- E. $-1 \leq x \leq 11$