TMT True 20 ACT Prep V1 ***Calculators Allowed*** Name: _____ Hr: ___

See instructional videos at www.TonkaMath.com

1. Find the GCF of 60 and 68 *[240-N401]*

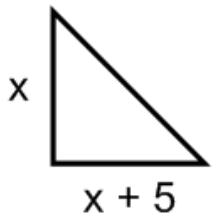
   A. 2
   B. 4
   C. 6
   D. 8
   E. 12

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 cone's radius to the nearest cm. *[215-G405]*

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

3. Find the hypotenuse of this right triangle in terms of x. *[216-G602]*

   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. If the point (-2,5) is reflected across the line y = x it's new location would be: *[G607]*

   F. (x, y)
   G. $(7, -3)$
   H. $(2, -5)$
   J. $(5, -2)$
   K. (5,2)

5. If the point (3 , 1) is rotated 90 degrees counterclockwise about the origin, it's new location would be: *[G608]*

   A. (-1, 3)
   B. (1, -3)
   C. (3, 4)
   D. $(4, 3)$
   E. $none\ of\ the\ above$

6. Sue 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-A604]*

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

7. Find the LCM of 20, 25 and 30 *[220-N502]*

   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-N606]*

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

9. How many diagonals does a hexagon have? *[230-G705]*

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

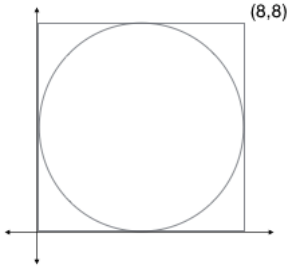
10. The secret puzzle code is found by multiplying the following matrices. What is the secret? $\begin{bmatrix} 2 & 3 \\ 1 & 0 \end{bmatrix} \times \begin{bmatrix} 3 & -1 \\ 2 & 2 \end{bmatrix}$? *[N705]*

    F. $\begin{bmatrix} 6 & -3 \\ 2 & 0 \end{bmatrix}$
    G. $\begin{bmatrix} 12 & 4 \\ 3 & -1 \end{bmatrix}$
    H. $\begin{bmatrix} 6 & -3 \\ -3 & 6 \end{bmatrix}$
    J. $\begin{bmatrix} 10 & 6 \\ 4 & 2 \end{bmatrix}$
    K. $none\ of\ the\ above$

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-S401]*

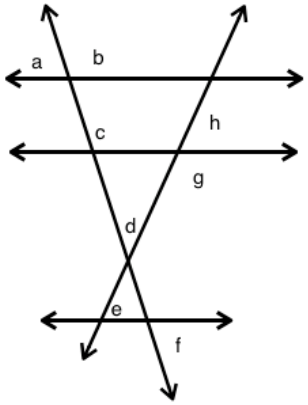
A. 101
B. 100
C. 99
D. 98
E. 97

12. What is the formula for the circle pictured below. *[225-AF602]*



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-G501]*



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-AF502]*

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

15. Which of the following are equal to $10x^3y^3z^5+25x^3y^4z^7-20x^2y^6z^9$ *[A601]*

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? *[A-701]*

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

17. Find the circumference and area of a circle when it's center is at (4,5) and a point on the circle is at 4,8. *[G507]*

F. 6
G. 9
H. 3π
J. 6π
K. $\pi(3)^2$

18. Which of the following equations could be the line perpendicular to $y=-2x-5$? *[G606]*

A. $y=-\frac{1}{2}x+4$
B. $y=\frac{1}{2}x$
C. $y=-\frac{1}{2}x-5$
D. $y=-\frac{2}{5}x$
E. $y=2x-5$

19. If a is put to the $\frac{2}{3}$ power it will be equal to which of the following? *[N605]*

F. $\sqrt{a}$
G. $\sqrt[2]{a}$
H. $\sqrt[3]{a^2}$
J. $\sqrt[2]{a^3}$
K. $\sqrt[3]{a}^6$

20. When using prime factorization to find the least common multiple, Jose had prime factored 28 when he erased the biggest prime factor. What did he erase? *[N601]*

A. 2
B. 4
C. 7
D. 14
E. 28