ALGEBRA 1 TEST 2

Name_____ Date_____

Directions: Complete as many problems as you can in the 30 minutes allotted to you. No calculators!

1. Simplify $-\left|-2\frac{1}{5}\right|+\frac{1}{2}$

(**A**) $-1\frac{4}{5}$ (**B**) $-1\frac{3}{5}$ (**C**) $-1\frac{7}{10}$ (**D**) $1\frac{7}{10}$ (**E**) $2\frac{7}{10}$

2. Solve $\frac{w}{4}+8=-16$

(**A**) -96 (**B**) -32 (**C**) -6 (**D**) -2 (**E**) 32

3. Which of the following numbers are irrational?

I. $\sqrt[3]{-3\frac{3}{8}}$ II. π III. $6.\overline{52}$

(**A**) I and II (**B**) I and III (**C**) II and III (**D**) I, II, and III (**E**) II

4. Solve $-4(-4x-8)=-48$

(**A**) -5 (**B**) $-\frac{5}{2}$ (**C**) -1 (**D**) 1 (**E**) 5

5. List the following numbers in order from greatest to least.

I. $-5.\overline{5005}$ II. $-5\frac{501}{1,000}$ III. -5.50051

(**A**) II, I, III (**B**) I, II, III (**C**) II, III, I (**D**) III, II, I (**E**) III, I, II

6. Two football players are 20 feet apart when they begin approaching each other. If both players each move $6\frac{1}{24}$ feet closer to each other, how many *inches* apart are the players?

(**A**) $7\frac{11}{12}$ (**B**) $23\frac{3}{4}$ (**C**) $53\frac{3}{4}$ (**D**) 95 (**E**) 215

7. Simplify $2+4(8\div 2+2\times 4-2)-2$

(**A**) 24 (**B**) 34 (**C**) 40 (**D**) 58 (**E**) 88

8. The ratio of boys to girls is 2:9. If there are 121 students total, how many more girls are there than boys?

(**A**) 66 (**B**) 77 (**C**) 81 (**D**) 88 (**E**) 99

9. The area of a triangle is $\frac{51}{64}$ square inches and the base is $2\frac{1}{8}$ inches. How much longer is the base than the height?

(**A**) $\frac{3}{2}$ (**B**) $\frac{5}{2}$ (**C**) $\frac{5}{4}$ (**D**) $\frac{11}{8}$ (**E**) $\frac{13}{8}$

10. If x^2+4x+7 is an even number, which of the following must be an odd number?

(**A**) $3x^2-5x-33+9x-2x^2$ (**B**) $x^2+x+60+3x-9$ (**C**) $6x^2-2x-80+6x-5x^2$

(**D**) $x^2-10x-17+14x+46$ (**E**) $10x^2+4x-25-9x^2-40$

11. In x more years, you will be $\frac{17}{4}x+1$ years old. How old were you $\frac{3}{4}x-2$ years ago?

(**A**) $\frac{5}{2}x-1$ (**B**) $\frac{5}{2}x+3$ (**C**) $\frac{7}{2}x-1$ (**D**) $\frac{7}{2}x+3$ (**E**) $4x-1$

12. The temperature increased $-6x^3+4x^2-3$ degrees until it reached $-3x^2-6x+4$ degrees. What was the temperature before the increase?

(**A**) $6x^3-7x^2-6x+7$ (**B**) $6x^3+x^2-6x+7$ (**C**) $6x^3-7x^2-6x+1$
(**D**) $6x^3-7x^2-6x-7$ (**E**) $6x^3+7x^2+6x-7$

13. Evaluate $-4x+4x(2x+1)$ if $x=2$.

(**A**) 0 (**B**) 5 (**C**) 25 (**D**) 32 (**E**) 256

14. If $w=\left(x^y\right)^z$, $y=3\sqrt[3]{a}$, and $z=3$, which of the following is equivalent to *w*?

(**A**) x^{9a} (**B**) x^{27a} (**C**) $x^{6\sqrt[3]{a}}$ (**D**) $x^{9\sqrt[3]{a}}$ (**E**) $x^{27\sqrt[3]{a}}$

15. If $600(500x-400)=300$, which of the following is equivalent to 3?

(**A**) $60(5x-4)$ (**B**) $6(5x-400)$ (**C**) $6(500x-400)$ (**D**) $6(5x-4)$ (**E**) $6(500x-4)$

16. Which point satisfies $5y-2x<-25$?

(**A**) $(9,-1)$ (**B**) $(4,-4)$ (**C**) $(-14,5)$ (**D**) $(-7,-2)$ (**E**) $(2,-3)$

17. For $-3\left[-2(a+b)+6\right]<-36$, which of the following best describes *a*?

(**A**) $a<-7-b$ (**B**) $a>-7-b$ (**C**) $a>-4-b$ (**D**) $a>-3-b$ (**E**) $a<-3-b$

18. Simplify $\left[6x^2-\dfrac{12x^4-28x^3+20x^2}{3x^2-7x+5}\right]^3$

(**A**) 6 (**B**) $6x^6$ (**C**) $6x^8$ (**D**) $8x^6$ (**E**) $8x^8$

19. The perimeter of a smaller equilateral triangle is $9x-3$ and the perimeter of a larger equilateral triangle is $15x+6$. How much longer is a side of the larger triangle than the smaller triangle?

(**A**) $-2x-3$ (**B**) $2x+1$ (**C**) $2x+3$ (**D**) $6x+9$ (**E**) $8x+3$

20. Simplify $2a^4-\dfrac{3}{5a^4}+\dfrac{5}{3a^3}$

(**A**) $\dfrac{30a^4-9+25a}{15a^4}$ (**B**) $\dfrac{30a^{16}-9a^8+25a^4}{15a^7}$ (**C**) $\dfrac{30a^{16}-9+25a}{15a^4}$ (**D**) $\dfrac{30a^{14}-9a^3+25a^4}{15a^{12}}$ (**E**) $\dfrac{30a^8-9+25a}{15a^4}$

21. Which of the following is true if $x=-\dfrac{1}{4}$?

I. x^{-7} II. x^{-8} III. x^{-9}

(**A**) I < III < II (**B**) I < II < III (**C**) III < II < I (**D**) III < I < II (**E**) II < III < I

22. Solve the following for $\dfrac{x}{y}$. $-3\left(\dfrac{x}{y}+2\right)=-2\cdot\dfrac{x}{y}+6$

(**A**) -12 (**B**) -4 (**C**) 0 (**D**) 4 (**E**) 12

23. If $-16-4\left(x^3+y^3\right)=-48$, find $\dfrac{\left(x^3+y^3\right)^2}{4}$.

(**A**) 1 (**B**) 9 (**C**) 16 (**D**) 64 (**E**) $\dfrac{25}{4}$

24. If $\dfrac{-128}{x^4+3}+2=4$, find the value of $\sqrt[3]{x^4+3}+1$.

(**A**) -63 (**B**) -20 (**C**) -7 (**D**) -3 (**E**) 5

25. For $6y+4x-6=0$ and $-12x+8y=-8$, what is the reciprocal of the product of the two slopes?

(**A**) -2 (**B**) -1 (**C**) $\dfrac{1}{2}$ (**D**) 1 (**E**) 2

ALGEBRA 1 TEST 2 ANSWERS

1. C	2. A	3. E	4. A	5. E
6. D	7. C	8. B	9. D	10. C
11. B	12. A	13. D	14. D	15. C
16. B	17. E	18. D	19. C	20. E
21. D	22. A	23. C	24. D	25. B

1. $-\left|-2\frac{1}{5}\right|+\frac{1}{2}=-\frac{22}{10}+\frac{5}{10}=-\frac{17}{10}$
2. -96
3. $\sqrt[3]{-3\frac{3}{8}}=\sqrt[3]{-\frac{27}{8}}=-\frac{3}{2}$. Therefore II
4. -5
5. III > I > II
6. $7\frac{11}{12}\cdot 12=95$
7. 40
8. $99-22=77$
9. $\frac{17}{8}-\frac{6}{8}=\frac{11}{8}$
10. $6x^2-2x-80+6x-5x^2$
11. $\frac{17}{4}x+1-x-\frac{3}{4}x+2=\frac{5}{2}x+3$
12. $-3x^2-6x+4-\left(-6x^3+4x^2-3\right)=6x^3-7x^2-6x+7$
13. $8(2)^2=32$
14. $w=\left(x^{3\sqrt[3]{a}}\right)^3=x^{9\sqrt[3]{a}}$
15. $6(500x-400)$
16. $(4,-4)\rightarrow -8-20<-25$
17. $a+b<-3\rightarrow a<-3-b$
18. $\left(6x^2-4x^2\right)^3=8x^6$
19. $5x+2-(3x-1)=2x+3$
20. $\frac{30a^8-9+25a}{15a^4}$
21. III < I < II
22. $-3a-6=-2a+6\rightarrow a=-12$
23. $\frac{\left(x^3+y^3\right)^2}{4}=16$
24. $x^4+3=-64\rightarrow\sqrt[3]{x^4+3}+1=-4+1=-3$
25. $-\frac{2}{3}\cdot\frac{3}{2}=-1$