ALGEBRA 1 TEST 1

Name_____ Date_____

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

1. $\dfrac{3+3(6+4\cdot 8-4\div 2+2)}{8-6+1}=$

(A) 117 **(B)** 114 **(C)** 41 **(D)** 39 **(E)** 20

2. $4^2-2^4+3^4-4^3-(-1)^{36}+(-1)^{37}=$

(A) -2 **(B)** 15 **(C)** 16 **(D)** 17 **(E)** 19

3. Evaluate $\dfrac{15}{x}$ when $x=3\dfrac{1}{3}$.

(A) $4\dfrac{1}{6}$ **(B)** $4\dfrac{1}{4}$ **(C)** $4\dfrac{1}{3}$ **(D)** $4\dfrac{2}{3}$ **(E)** $4\dfrac{1}{2}$

4. Solve $6\dfrac{1}{4}-x=8\dfrac{1}{5}$

(A) $-2\dfrac{1}{20}$ **(B)** $-1\dfrac{19}{20}$ **(C)** $-1\dfrac{1}{20}$ **(D)** $1\dfrac{1}{20}$ **(E)** $1\dfrac{19}{20}$

5. $-\sqrt{77}$ is between what two consecutive integers?

(A) -8 and -7 **(B)** -7 and -6 **(C)** -78 and -79 **(D)** -9 and -8 **(E)** -6 and -5

6. Solve $\dfrac{13\frac{1}{3}}{x}=4\dfrac{1}{6}$

(A) $\dfrac{5}{16}$ **(B)** $3\dfrac{1}{5}$ **(C)** $3\dfrac{1}{4}$ **(D)** $3\dfrac{1}{3}$ **(E)** $55\dfrac{5}{9}$

7. $\left(\sqrt{64}+\sqrt[3]{64}\right)^2=$

(A) 16 **(B)** 80 **(C)** 144 **(D)** 169 **(E)** 225

8. State the property used. $\dfrac{3\sqrt{x}}{a^2}+\left(\dfrac{\sqrt[4]{y}}{b^2}+\dfrac{\sqrt[5]{z+1}}{(c+d)^2}\right)+0=\left(\dfrac{3\sqrt{x}}{a^2}+\dfrac{\sqrt[4]{y}}{b^2}\right)+\dfrac{\sqrt[5]{z+1}}{(c+d)^2}+0$

(A) identity **(B)** transitive **(C)** commutative **(D)** distributive **(E)** associative

9. $-2|-2+3|-3|-2-3|=$

(A) -17 **(B)** -13 **(C)** -9 **(D)** 13 **(E)** 17

10. The area of a triangle is 4 and the base is $5\dfrac{1}{7}$. Find the height.

(A) $\dfrac{7}{9}$ **(B)** $\dfrac{8}{9}$ **(C)** $1\dfrac{5}{9}$ **(D)** $1\dfrac{2}{3}$ **(E)** $1\dfrac{7}{9}$

11. If $2\dfrac{1}{2}(a+b)=20$, find $\dfrac{a+b}{2}$.

(A) $3\dfrac{1}{2}$ **(B)** 4 **(C)** $4\dfrac{1}{2}$ **(D)** 5 **(E)** 8

12. $|-8+6\div 2|-|-18+4\times 3|=$

(A) -7 **(B)** -5 **(C)** -1 **(D)** 5 **(E)** 11

13. Evaluate $v\left[x+y\left(z-w\right)\right]-t$ if $v=-2$, $x=-1$, $y=4$, $z=5$, $w=-3$, and $t=6$.

(A) -68 **(B)** -62 **(C)** -56 **(D)** 84 **(E)** 372

14. Solve $-2\left(10x+15\right)+9=5\left(x-5\right)+4$

(A) -25 **(B)** -4 **(C)** 0 **(D)** any number **(E)** undefined

15. $\dfrac{50\left(a+b\right)}{c}$ quarters is equivalent to how many dimes if $a=10-b$?

(A) $\dfrac{200}{c}$ **(B)** $\dfrac{250}{c}$ **(C)** $\dfrac{750}{c}$ **(D)** $\dfrac{1000}{c}$ **(E)** $\dfrac{1250}{c}$

16. $\left(\sqrt[3]{a}\right)^{-2}\left[\dfrac{\left(\sqrt[3]{a}\right)^{-4}}{\left(\sqrt[3]{a}\right)^{8}\left(\sqrt[3]{a}\right)^{-24}}\right]=$

(A) $\left(\sqrt[3]{a}\right)^{-24}$ **(B)** $\left(\sqrt[3]{a}\right)^{-22}$ **(C)** $\dfrac{1}{4}\left(\sqrt[3]{a}\right)^{-2}$ **(D)** $\left(\sqrt[3]{a}\right)^{10}$ **(E)** $\left(\sqrt[3]{a}\right)^{40}$

17. Twice the sum of $\left(x-y\right)$ and -6 is 18 less than the opposite of $\left(x-y\right)$. Find the value of $\left(x-y+1\right)^5$.

(A) -5 **(B)** -1 **(C)** 5 **(D)** 10 **(E)** 32

18. $\left(-4x^3+6x^3\right)\left(-4x^3-6x^3\right)=$

(A) $-20x^3$ **(B)** $-20x^6$ **(C)** $-20x^9$ **(D)** $-20x^{12}$ **(E)** $-20x^{36}$

19. A rectangle with a width of $\left(4x-2\right)$ and a length of $\left(2x+4\right)$ has an area how much greater than a rectangle one-fourth its size?

(A) $6x^2-9x-10$ **(B)** $6x^2-9x+6$ **(C)** $6x^2+9x-6$ **(D)** $6x^2-8x-6$ **(E)** $6x^2-8x+6$

20. Evaluate $\dfrac{2\left(x+3y\right)\left(x^2-3xy+9y^2\right)+2\left(x-3y\right)\left(x^2+3xy+9y^2\right)}{x^2}$ if $x=2\dfrac{3}{4}$ and $y=-1$.

(A) -1 **(B)** $2\dfrac{3}{4}$ **(C)** $5\dfrac{1}{2}$ **(D)** $8\dfrac{1}{4}$ **(E)** 11

21. $\dfrac{3}{4a^4b^6}-\dfrac{2}{6a^5b^3}-1=$

(A) $\dfrac{9a-4b^3-6a^5b^2}{12a^5b^6}$ **(B)** $\dfrac{9a-4b^3-1}{12a^5b^6}$ **(C)** $\dfrac{18a-8b^3-1}{24a^5b^6}$ **(D)** $\dfrac{9a-4b^3-12a^5b^6}{12a^5b^6}$ **(E)** $\dfrac{9a^5b^3-4a^4b^6-1}{12a^9b^9}$

22. $\sqrt{1\dfrac{13}{36}}-\dfrac{1}{3}=$

(A) $\dfrac{5}{6}$ **(B)** $\dfrac{7}{9}$ **(C)** $\dfrac{8}{9}$ **(D)** $\dfrac{29}{36}$ **(E)** $\dfrac{31}{36}$

23. A trapezoid has a height of $6\sqrt{3}$ and the bases are $4\sqrt{3}$ and $2\sqrt{6}$. Find the area.

(A) $72-36\sqrt{2}$ **(B)** $72+36\sqrt{2}$ **(C)** $36-18\sqrt{2}$ **(D)** $36+18\sqrt{2}$ **(E)** $36+18\sqrt{6}$

24. Evaluate $4\left(x-\dfrac{\sqrt{y}}{2}\right)\left(x+\dfrac{\sqrt{y}}{2}\right)+y-5x^2$ if $x=-\sqrt{5}$ and $y=-2$

(A) -5 **(B)** -2 **(C)** 1 **(D)** 2 **(E)** 5

25. If you double a number and subtract 3, you get *q*. If you double *q* and subtract 3, you get *p*. If you double *p* and subtract 3, you get -9. Find the original number you started with.

(A) -4 **(B)** -3 **(C)** -2 **(D)** -1 **(E)** 1.5

ALGEBRA 1 TEST 1 ANSWERS

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

1. $1+38=39$
2. $81-64-2=15$
3. $\frac{3}{2}\cdot 3=4\frac{1}{2}$
4. $-\left(7\frac{24}{20}-6\frac{5}{20}\right)=-1\frac{19}{20}$
5. –9 and -8
6. $\frac{40}{3}\cdot\frac{6}{25}=3\frac{1}{5}$
7. $12^2=144$
8. associative
9. $-2-15=-17$
10. $h=4\cdot\frac{7}{18}=1\frac{5}{9}$
11. $a+b=8\rightarrow\frac{a+b}{2}=4$
12. $5-6=-1$
13. $-62-6=-68$
14. $25x=0\rightarrow x=0$
15. $\frac{250}{c}\cdot 5=\frac{1250}{c}$
16. $\left(\sqrt[3]{a}\right)^{10}$
17. $x-y=-2\rightarrow\left(x-y+1\right)^5=-1$
18. $-20x^6$
19. $\frac{3}{4}\left(8x^2+12x-8\right)=6x^2+9x-6$
20. $2\frac{3}{4}\cdot 4=11$
21. $\frac{9a-4b^3-12a^5b^6}{12a^5b^6}$
22. $\frac{7}{6}-\frac{2}{6}=\frac{5}{6}$
23. $3\sqrt{3}\left(4\sqrt{3}+2\sqrt{6}\right)=36+18\sqrt{2}$
24. $-x^2=-5$
25. $8x-21=-9\rightarrow x=1.5$