PRE-ALGEBRA TEST 4

Name_____ Date_____

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

1. Which of the following has the least value?

(**A**) $6\frac{1}{2}+6\frac{1}{2}+6\frac{1}{2}+6\frac{1}{2}$ (**B**) $4\times6\frac{2}{3}$ (**C**) $\left(2\times6\frac{2}{3}\right)+\left(2\times6\frac{2}{3}\right)$ (**D**) $\left(3\times6\frac{1}{2}\right)+6\frac{3}{5}$ (**E**) $\left(5\times6\frac{1}{2}\right)-6\frac{2}{3}$

2. Which will produce the largest quotient?

(**A**) $47.75\div2.5$ (**B**) $47.76\div2.5$ (**C**) $47.8\div2.5$ (**D**) $47.8\div2.6$ (**E**) $47.8\div2.7$

3. Tom used five-twelfths of his check to pay bills and he gave one-sixth of his check to each of his 3 friends. What fraction of his money does he still have left?

(**A**) $\frac{1}{3}$ (**B**) $\frac{1}{4}$ (**C**) $\frac{1}{6}$ (**D**) $\frac{1}{12}$ (**E**) $\frac{11}{12}$

4. What fraction of 800 is 320?

(**A**) $\frac{2}{5}$ (**B**) $\frac{5}{2}$ (**C**) $\frac{3}{8}$ (**D**) $\frac{1}{4}$ (**E**) $\frac{3}{10}$

5. It took 5 people working 10 hours to complete the job. What is the minimum number of people that would be needed to complete the job in 8 hours or less? Assume everyone works at the same pace.

(**A**) 6 (**B**) 7 (**C**) 8 (**D**) 9 (**E**) 10

6. Which of the following is the smallest?

(**A**) $2\frac{3}{8}$ (**B**) 2.376 (**C**) $\frac{19}{7}$ (**D**) 237.8% (**E**) $2\frac{3}{8}\times\frac{17}{16}$

7. Which of the following is true?

I. $\frac{1}{4}\%$ II. 0.003 III. $\frac{1}{401}$

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

8. A clock is malfunctioning such that the minute hand moves 45 minutes every hour. If you set the clock at the correct time at 8:00 am, what time will the clock read when the actual time is 4:00 pm of the same day?

(**A**) 1:30 pm (**B**) 1:45 pm (**C**) 2:00 pm (**D**) 2:15 pm (**E**) 2:30 pm

9. You traveled 100 miles from home at a speed of 40 mph. How much time would you save if you returned home at a rate of 50 mph?

(**A**) 15 minutes (**B**) 20 minutes (**C**) 30 minutes (**D**) 40 minutes (**E**) 10 hours

10. Which quantity has the largest value?

(**A**) $7.02\cdot1000$ (**B**) $702{,}000\div1000$ (**C**) $70{,}200\div10$ (**D**) $0.702\times10{,}000$ (**E**) 702×100

11. $10^6+10^4+10^2=$

(**A**) 101,010 (**B**) 101,100 (**C**) 110,100 (**D**) 1,001,100 (**E**) 1,010,100

12. If 60% of the games were wins and you played g games, how many of the games were losses?

(**A**) $g\%-60\%$ (**B**) $g-40\%$ (**C**) $g-60\%$ (**D**) $40\%\cdot g$ (**E**) $60\%\cdot g$

13. If $463+(a+b+c)=721$, find the value of $a+b+c$.

(**A**) 258 (**B**) 268 (**C**) 269 (**D**) 358 (**E**) 368

14. What is the reciprocal of $\frac{1}{4}$%?

(**A**) 4% (**B**) 40% (**C**) 400% (**D**) 4,000% (**E**) 40,000%

15. You found a sweater that was 20% off and you paid $16. What was the price of the sweater before the discount?

(**A**) $18 (**B**) $20 (**C**) $22 (**D**) $23 (**E**) $24

16. In your rectangular shaped backyard, everything is grass except for your rectangular shaped pool. If the dimensions of the yard are 100 feet by 70 feet and the dimensions of the pool are 20 feet by 10 feet, find the area of the grass.

(**A**) 280 ft.^{2} (**B**) 500 ft.^{2} (**C**) 5800 ft.^{2} (**D**) 6800 ft.^{2} (**E**) 6940 ft.^{2}

17. A certain real estate agent gets paid 6% of the value of each house that she sells. How much would she make if she sold a $200,000 house?

(**A**) $12,000 (**B**) $3333 (**C**) $1200 (**D**) $333 (**E**) $120

18. If 1 inch equals 2.54 cm, how many centimeters would 20 inches equal?

(**A**) 5.08 (**B**) 40.8 (**C**) 50.08 (**D**) 50.8 (**E**) 508

19. If *m* students share *n* cookies, how many cookies would each student get?

(**A**) $m+n$ (**B**) $m\times n$ (**C**) $m-n$ (**D**) $m\div n$ (**E**) $n\div m$

20. A certain number is divided by 3. This quotient is then multiplied by 4 to get back to the original number. What is the original number?

(**A**) 0 (**B**) $\frac{3}{4}$ (**C**) $\frac{4}{3}$ (**D**) $\frac{4}{9}$ (**E**) $\frac{9}{4}$

21. Evaluate $x+yz^2$ if $x=2$, $y=3$, and $z=4$.

(**A**) 26 (**B**) 40 (**C**) 50 (**D**) 80 (**E**) 146

22. $\sqrt{16}$ is not an element of what set(s) of numbers?

I. rational II. irrational III. integers

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

23. If $2\times e=300$ and $175\div f=25$, find the value of $\frac{e+f}{157}$.

(**A**) $\frac{14}{157}$ (**B**) $\frac{29}{157}$ (**C**) $\frac{45}{157}$ (**D**) $\frac{121}{157}$ (**E**) 1

24. Solve $h\div 16=\frac{27-3}{3}$.

(**A**) 2 (**B**) 24 (**C**) 48 (**D**) 96 (**E**) 128

25. Five more than the product of 12 and a number is 53 can be written which of the following ways?

(**A**) $5+12+n=53$ (**B**) $5+(12+n)=53$ (**C**) $12n-5=53$ (**D**) $5+12n=53$ (**E**) $(5+12)n=53$

PRE-ALGEBRA TEST 4 ANSWERS

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

1. Choice A = $4 \times 6\frac{1}{2}$ which eliminates B. Choice C can also be written as B and will be eliminated. Choice D can be written as 4 addends. The fourth addend of D will be larger than the fourth addend of A, thus eliminating D. Choice E = choice A + $+6\frac{1}{2} - 6\frac{2}{3}$. Since $6\frac{2}{3} > 6\frac{1}{2}$, choice E will be the smallest.

2. Choices A , B, and C each have the same divisor. Therefore C is larger than A and B since its dividend is larger. Choices C, D, and E have the same dividend. Therefore the largest quotient will have the smallest divisor which is C.

3. $\frac{12}{12} - \left(\frac{5}{12} + \frac{2}{12} + \frac{2}{12} + \frac{2}{12}\right) = \frac{12}{12} - \frac{11}{12} = \frac{1}{12}$

4. $\frac{320}{800} = \frac{2}{5}$

5. $\frac{5 \times 10}{8} = 6\frac{2}{8}$ or 7 people.

6. Choice A = $2\frac{3}{8} = 2.375 = 237.5\%$ which eliminates B and D. For choice E, since $\frac{17}{16} > 1$, then choice E must be greater than A. Choice C = $\frac{19}{7}$ which is greater than A. Therefore A.

7. Since I = $\frac{1}{4}\% = 0.25\% = 0.0025$, then I < II. Also, III = $0.0024...$ which is less than I. Therefore III < I < II.

8. $8{:}00 + \left(\frac{3}{4} \times 8\right) = 8{:}00 + 6$ hours equals 2:00

9. $\frac{100}{40} - \frac{100}{50} = 2.5 - 2 = 0.5$ hours = 30 minutes

10. Choice E = 70,200

11. $10^6 + 10^4 + 10^2 = 1{,}000{,}000 + 10{,}000 + 100 = 1{,}010{,}100$

12. $40\% \cdot g$

13. $a + b + c = 721 - 463 = 258$

14. $\frac{1}{4}\% = \frac{1}{4} \cdot \frac{1}{100} = \frac{1}{400}$. Therefore the reciprocal of $\frac{1}{400} = 400 = 40{,}000\%$.

15. $80\% \cdot \text{original price} = 16 \rightarrow \text{original price} = \frac{16}{80\%} = \frac{16}{0.8} = \$20$

16. $(70 \times 100) - (10 \times 20) = 7000 - 200 = 6800$

17. $200{,}000 \times 6\% = 200{,}000 \times 0.06 = 12{,}000$

18. $2.54 \times 20 = 50.8$

19. $n \div m$

20. $\frac{x}{3} \cdot 4 = x \quad \rightarrow \quad 4x = 3x \quad \rightarrow \quad x = 0$

21. $2 + 3(4)^2 = 2 + 48 = 50$

22. $\sqrt{16} = 4$ which is not irrational

23. $e = 300 \div 2 = 150$ and $f = 175 \div 25 = 7$. Therefore $\frac{e + f}{157} = \frac{150 + 7}{157} = \frac{157}{157} = 1$.

24. $h \div 16 = \frac{27 - 3}{3} \rightarrow h \div 16 = 8 \rightarrow h = 128$

25. $5 + 12n = 53$