PRE-ALGEBRA TEST 1

Name_____ Date_____

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

1. It takes 8 days for 15 students to sell 960 pizzas. How many pizzas does each student sell a day on average?
(**A**) 7 (**B**) 7.5 (**C**) 8 (**D**) 8.5 (**E**) 9

2. What is the sum of the two largest prime numbers less than 80?
(**A**) 144 (**B**) 148 (**C**) 150 (**D**) 152 (**E**) 156

3. A lawn mower can travel at 4.78 miles per hour in third gear and 6.1 miles per hour in fourth gear. How much faster is the lawn mower in fourth gear than third?
(**A**) 1.32 mph (**B**) 1.42 mph (**C**) 1.48 mph (**D**) 1.68 mph (**E**) 2.32 mph

4. Which statement is the smallest difference.
(**A**) $47{,}698-(7{,}842+9{,}659)$ (**B**) $47{,}697-(7{,}842+9{,}659)$ (**C**) $47{,}696-(7{,}842+9{,}659)$
(**D**) $47{,}695-(7{,}842+9{,}659)$ (**E**) $47{,}695-(7{,}843+9{,}659)$

5. Which will produce the largest remainder?
(**A**) $32{,}212\div 78$ (**B**) $32{,}213\div 78$ (**C**) $32{,}215\div 78$ (**D**) $32{,}216\div 78$ (**E**) $32{,}217\div 78$

6. An average football game requires 3 hours and 21 minutes to complete. If the game started 69 minutes ago, how many hours are left?
(**A**) $2\frac{1}{3}$ (**B**) $2\frac{1}{4}$ (**C**) $2\frac{1}{5}$ (**D**) $2\frac{1}{6}$ (**E**) $2\frac{13}{15}$

7. Which has the smallest product? You may round.
(**A**) $201\times 8{,}001$ (**B**) $21\times 80{,}010$ (**C**) $2{,}001\times 801$ (**D**) $401\times 4{,}002$ (**E**) $199\times 7{,}999$

8. Jason averaged 20 points a game for his 16 basketball games. If he averaged 18 points in the first 10 games, how many points did he average in the remaining 6 games? Round your answer to the nearest integer.
(**A**) 21 (**B**) 22 (**C**) 23 (**D**) 24 (**E**) 25

9. If the perimeter of a rectangle is 60 and its length is 20, find the area.
(**A**) 60 (**B**) 120 (**C**) 160 (**D**) 200 (**E**) 500

10. What value of z will produce the next number in the following sequence?
$20\times 4,\ 4\times 10,\ 5\times 4,\ 2\times 5,\ z-22$
(**A**) –17 (**B**) 17 (**C**) 27 (**D**) 28 (**E**) 29

11. Which of the following simplifies to the smallest number?
(**A**) $42\frac{3}{8}\div\left(19\frac{2}{5}\div 4\frac{1}{7}\right)$ (**B**) $42\frac{5}{8}\div\left(19\frac{2}{5}\div 4\frac{1}{7}\right)$ (**C**) $42\frac{3}{8}\div\left(19\frac{3}{5}\div 4\frac{1}{7}\right)$
(**D**) $42\frac{3}{8}\div\left(19\frac{4}{5}\div 4\frac{1}{7}\right)$ (**E**) $42\frac{3}{8}\div\left(19\frac{4}{5}\div 4\frac{1}{5}\right)$

12. Sod costs \$.50 per square foot. How much money will you spend on sod if your yard is 90 feet wide and 180 feet long.
(**A**) \$810 (**B**) \$4,050 (**C**) \$7,600 (**D**) \$8,100 (**E**) \$8,600

13. $800 was divided evenly among 10,000 people. How much did each person receive?

(A) $0.08 **(B)** $0.80 **(C)** $8.00 **(D)** $80 **(E)** $800

14. $\frac{1}{4}\times\frac{4}{5}\times\frac{5}{6}\times\frac{6}{7}\times\frac{7}{8}=$

(A) $\frac{5}{8}$ **(B)** $\frac{5}{12}$ **(C)** $\frac{841}{6720}$ **(D)** $\frac{1}{8}$ **(E)** $\frac{1}{12}$

15. If $8\frac{2}{3}$ pies are distributed evenly among 13 people, how much would each person get?

(A) $\frac{26}{16}$ **(B)** $\frac{3}{2}$ **(C)** $\frac{3}{4}$ **(D)** $\frac{2}{3}$ **(E)** $\frac{1}{3}$

16. A motorcycle travels 480 miles at 30 mph. If the motorcycle would have traveled at 44 mph for the same amount of time, how much farther would it have gone?

(A) 224 **(B)** 238 **(C)** 252 **(D)** 704 **(E)** 792

17. What percent of 2 is 4000?

(A) 0.0005% **(B)** 0.05% **(C)** 20% **(D)** 20,000% **(E)** 200,000%

18. A piece of graph paper consists of *w* rows down and *p* rows across. If 37 spaces are shaded, how many spaces are not shaded?

(A) $w(p-37)$ **(B)** $37-wp$ **(C)** $w+p-37$ **(D)** $wp+37$ **(E)** $wp-37$

19. If $24x+8$ is an even number, what is the largest odd number that is smaller than $24x+8$?

(A) $23x+8$ **(B)** $24x+6$ **(C)** $24x+7$ **(D)** $24x+9$ **(E)** $24x+10$

20. 5 times the sum of a number and 8 can be written as

(A) $5\cdot 8+n$ **(B)** $5+n+8$ **(C)** $5n+8$ **(D)** $5(n\cdot 8)$ **(E)** $5(n+8)$

21. $40\div 2+2\cdot 8-6=$

(A) $6\frac{2}{3}$ **(B)** 24 **(C)** 30 **(D)** 74 **(E)** 170

22. Solve $\frac{8}{x}=\frac{24}{7}$

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

23. Write an equation for the following sentence. When Bob's age is doubled and decreased by 3, the result is 36.

(A) $n^2+3=36$ **(B)** $n^2-3=36$ **(C)** $2n+3=36$ **(D)** $2n-3=36$ **(E)** $(n+2)-3=36$

24. Simplify $60\div 4\times 3+6\times 2$.

(A) 1 **(B)** 17 **(C)** 22 **(D)** 57 **(E)** 102

25. Simplify $2^4+2^5+2^3+2^2$.

(A) 28 **(B)** 38 **(C)** 48 **(D)** 58 **(E)** 60

PRE-ALGEBRA TEST 1 ANSWERS

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

1. $960 \div 8 = 120$ total pizzas sold per day. $120 \div 15 = 8$ pizzas per student.
2. $79 + 73 = 152$
3. $6.1 - 4.78 = 1.32$
4. No addition and subtraction is necessary. A, B, C, and D have the same subtrahend. Therefore the smallest difference will have the smallest minuend which eliminates A, B, and C. When comparing D and E, the minuends are the same. Therefore the smallest difference will have the largest subtrahend. Since the subtrahend of E is larger by one, E will have the smallest difference.
5. $32{,}212 \div 78$ produces a remainder of 76. Therefore 32,213 will produce the largest remainder.
6. 3 hr. 21 min. - 69 min. = 2 hr. 81 min. - 69 min. = 2 hr. 12 min. = $2\frac{12}{60} = 2\frac{1}{5}$ hours
7. No detailed multiplication is necessary. A, B, C and D rounded down will equal 1,600,000. Choice E rounded up will equal 1,600,000. Therefore E has the smallest product.
8. $(20 \times 16) - (18 \times 10) = 140$ points left for the remaining 6 games. $140 \div 6 = 23.\overline{3}$ per game which rounds to 23
9. length + width = half of perimeter. Therefore 20 + width = 30. Then width = 10. Area = $20 \times 10 = 200$
10. 80, 40, 20, 10 5 . Therefore $z - 22 = 5 \rightarrow z = 27$.
11. When comparing choices A and B, the divisors are the same. Since the dividend of B is larger, B will have the larger quotient and is eliminated. When comparing A with C, A is eliminated because it has a smaller divisor. When comparing C and D, C is eliminated because it has a smaller divisor. When comparing D and E, E is eliminated because it has a smaller divisor.
12. $90 \times 180 \times 0.5 = 90 \times 90 = 8100$
13. $800 \div 10{,}000 = 0.08$
14. don't multiply, just cancel to $\frac{1}{8}$
15. $8\frac{2}{3} \div 13 = \frac{2}{3}$
16. $480 \div 30 = 16 \text{ hours}. 16 \text{ hours} \times (44 - 30) = 16 \times 14 = 224$
17. $p \cdot 2 = 4000$, $p = 2000 = 200{,}000\%$
18. wp equals how many total spaces there are. $wp - 37$ equals the number of spaces not shaded.
19. $24x + 8 - 1 = 24x + 7$
20. $5(n + 8)$
21. $40 \div 2 + 2 \cdot 8 - 6 = 20 + 16 - 6 = 30$
22. $\frac{8}{x} = \frac{24}{7} \rightarrow x = \frac{8 \times 7}{24} = \frac{7}{3} = 2\frac{1}{3}$
23. $2n - 3 = 36$
24. $60 \div 4 \times 3 + 6 \times 2 = 45 + 12 = 57$
25. $2^4 + 2^5 + 2^3 + 2^2 = 16 + 32 + 8 + 4 = 60$