

Basic Math and Algebra Practice

30 Minutes – (Don't skip any questions)

- 1) How many of the positive divisors of 192 are also multiples of 6?
A. 4 B. 5 C. 6 D. 7 E. 8
- 2) If $n\Omega = n^2 - n$, for all positive numbers n . What is the value of $\frac{1}{4}\Omega - \frac{1}{2}\Omega$?
A. $1/16$ B. $-1/16$ C. $1/2$ D. $-1/2$ E. $1/4$
- 3) If x and y are distinct factors of 8100 and if x is an odd integer and y is a prime integer, what is the greatest possible value of $x \times y$?
A. 10125 B. 8100 C. 4050 D. 2025 E. 405
- 4) If $\frac{h}{3}$ and $\frac{h}{4}$ are integers, and if $70 < h < 100$, what are the greatest and smallest values of h ?
A. 72 and 84 B. 72 and 99 C. 72 and 96 D. 84 and 96 E. None
- 5) Lines l and m intersect at a point to form four angles. If one of the angles formed is 15 times as large as an adjacent angle, what is the measure in degrees, of the smaller angle?
A. 150 B. 12.30 C. 11.25 D. 110 E. 10.30
- 6) A certain phone call costs 75 cents for the first three minutes plus 15 cents for each additional minute. If the call lasted x minutes and x is an integer greater than 3, which of the following expresses the cost of the call, in dollars?
A. $0.75(3) + 0.15x$
B. $0.75(3) + 0.15(x + 3)$
C. $0.75 + 0.15(3 - x)$
D. $0.75 + 0.15(x - 3)$
E. $0.75 + 0.15x$
- 7) If $4\sqrt{2x} - 2 = 16$, then $x =$
A. $-4\frac{1}{3}$ B. -2 C. $8\frac{1}{2}$ D. $8\frac{1}{4}$ E. $10\frac{1}{8}$

- 8) Two hotdogs and a soda cost \$ 3.25. If three hotdogs and a soda cost \$ 4.50, what is the cost of two sodas?
A. \$ 0.75 B. \$ 1.25 C. \$ 1.50 D. \$ 2.50 E. \$ 3.00
- 9) The ratio of x to y to z is 3: 6: 8. If $y = 24$, what is the value of $x + z$?
A. 11 B. 33 C. 44 D. 66 E. 88
- 10) What was the initial weight, in pounds, of a person who gained p pounds, then lost 8 pounds, and now weighs w pounds?
A. $w + p + 8$ B. $w + p - 8$ C. $w - p + 8$ D. $w - p - 8$ E. $p - w - 8$
- 11) The relation between x and y , if x divides y and y divides x , is:
I. $x > y$ II. $x < y$ III. $x = y$
A. I only B. II only C. I and II only D. III only E. None
- 12) If x, y and z are real numbers such that $x < y$ and $z < 0$, then the statement which is true is
A. $xz < yz$ B. $\frac{x}{z} < \frac{y}{z}$ C. $\frac{z}{x} > \frac{z}{y}$ D. $xz > yz$ E. None
- 13) How many prime numbers are of the form $10n + 1$, where n is a whole number such that $1 \leq n \leq 10$?
A. 2 B. 3 C. 4 D. 5 E. 6
- 14) Two numbers are in the ratio 3: 5. If each is increased by 10, the ratio becomes 5: 7. The numbers are:
A. 3 and 5 B. 15 and 25 C. 12 and 20 D. 30 and 50 E. 60 and 100
- 15) If $a * b = (a + b)ab$, find $2 * (3 * 4)$
A. 2034 B. 2304 C. 6444 D. 8596 E. 14448
- 16) The difference between the squares of two consecutive odd integers is 152. What is the larger of the integers?
A. 37 B. 39 C. 41 D. 43 E. 45
- 17) How many positive 3-digit integers have an odd digit in both the ten's and unit's place?
A. 25 B. 225 C. 250 D. 275 E. 350