

Algebra Readiness Diagnostic Practice Test

Math 10 Math 55 Math 90 Math 96 Busi 90

2nd, 3rd, 6th

ALGEBRA READINESS DIAGNOSTIC PRACTICE TEST

Directions: Work the problems, then check your answers on the last page.

A. Integers

1. Donna's heart beats 60 times a minute. At this rate, how many times does her heart beat in one and one half hours?
A) 3600 B) 1800 C) 5400 D) 6300
2. $2 - 8 + 3 - 6 =$
A) -14 B) -9
C) 1 D) 5
3. Linda drove 325 miles on a trip. At the end of the trip, the total mileage on the car's odometer read 4013. What was the mileage of the car at the beginning of Linda's trip?
A) 4988 B) 3363 C) 3688 D) 4338
4. On the number line, the distance between -5 and 7 is:
A) 2 B) -2 C) 7 D) 12
5. The least common multiple of 14 and 12 is
A) 168 B) 42 C) 84 D) 24
6. The prime factorization of 20 is:
A) 2×10 B) 5×4 C) $2 \times 2 \times 5$ D) $2 \times 5 \times 5$
7. What number divided by -6 gives 18 as the result?
A) -108 B) -3 C) 3 D) 108
8. $-8[(-5)(-4)+6]$
A) 208 B) -11 C) 12 D) -16
C) 24 D) -208
9. $10 - (12 - 14)$
A) -2 B) -16
C) 12 D) 36

Do your best!
Not all of those
will count but
try to complete
all of them.



10. On the number line shown above, what number represents the point half the distance between points C and D?

- A) 0 B) 2 C) 4 D) 16

B. Fractions

1. $3 \times 24 =$

- A) 72 B) 18
C) 12 D) 96

2. $5 \times 3 =$

- A) 5 B) 8
C) 2 D) 1
3

3. $(\frac{1}{16} + \frac{1}{16}) - \frac{9}{8} =$

- A) 0 B) 8
C) -1 D) $3\frac{1}{2}$

4. In the first 18 games of the season, a baseball player was up to bat 8 times and hit all 8 times. If she continues at the same rate, how many hits will she have after 45 games?

- A) 20 B) 101 C) 45 D) 62

5. For which of the following values of y is $\frac{54}{y}$ a whole number?

- I = 6 A) II only B) I and II only
II = 0 C) II and III only D) I and III only
III = 9 E) III only

6. $\frac{6 \times 8}{5 \times 3} =$

- A) $\frac{1}{15}$ B) $\frac{1}{10}$ C) 1 D) $\frac{1}{45}$

7. $3 + \frac{1}{2} =$

- A) $3\frac{4}{5}$ B) $2\frac{5}{12}$ C) $1\frac{1}{2}$ D) $1\frac{3}{11}$

8. Which of the fractions shown below is the largest?

| | | |
|---------------|----------------|---------------|
| $\frac{5}{8}$ | $\frac{7}{16}$ | $\frac{1}{2}$ |
|---------------|----------------|---------------|

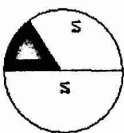
- A) All three fractions are equal B) $\frac{5}{8}$ C) $\frac{1}{2}$ D) $\frac{7}{16}$

9. Of the fractions shown below, which of the following represents the ordering from the smallest to the largest?

| | | |
|---------------|---------------|----------------|
| $\frac{1}{2}$ | $\frac{3}{8}$ | $\frac{9}{16}$ |
|---------------|---------------|----------------|

- A) $\frac{9}{16}, \frac{1}{2}, \frac{3}{8}$ B) $\frac{3}{8}, \frac{1}{2}, \frac{9}{16}$ C) $\frac{1}{2}, \frac{9}{16}, \frac{3}{8}$ D) $\frac{3}{8}, \frac{9}{16}, \frac{1}{2}$

10. In the figure shown below, what fractional part of the circle is shaded?



- A) $\frac{5}{9}$ B) $\frac{7}{9}$ C) $\frac{16}{6}$ D) $\frac{1}{6}$
11. $2 + \frac{3}{6} =$ A) $\frac{5}{10}$ B) $\frac{3}{10}$ C) $\frac{5}{6}$ D) $\frac{13}{12}$

Remember Fractions %

C. Decimals

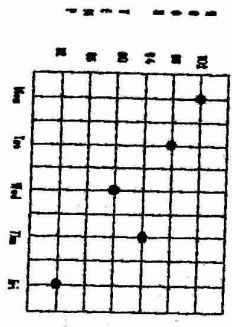
1. $0.148 + 637 + 93.96 =$
 - A) 76.108
 - B) 94.781
 - C) 731.108
 - D) 10.217
2. $721.75 - 68.247 =$
 - A) 39.28
 - B) 365.305
 - C) 653.503
 - D) 635.053
3. What is 45% of 500?
 - A) 22.5
 - B) 225
 - C) 2,250
 - D) 22,500
4. $\frac{0.03645}{2.7} =$
 - A) 001.35
 - B) 00013.5
 - C) 00.135
 - D) 0.0135
5. Dawn and Terry each earn \$15.00 per hour at part time jobs. If on a certain day Terry worked three and one-half hours and Dawn worked four and three-quarter hours, what is the total amount of their earnings that day?
 - A) \$123.75
 - B) \$50.50
 - C) \$120.00
 - D) \$65.75
6. $16\% =$
 - A) 1.6
 - B) 0.16
 - C) 16.0
 - D) 0.016
7. $3\% =$
 - A) 0.03
 - B) 0.3
 - C) 3.0
 - D) 30.0
8. $(2.3)^2 - (0.3)^2 =$
 - A) 2
 - B) 4.09
 - C) 5.2
 - D) 1
9. It takes 16 minutes for a certain bacteria population to double. If there are 6,140,276 bacteria in this population at 9:15am, what is the best estimate, in millions, of the number of bacteria at 9:47am on the same day?
 - A) 25
 - B) 30
 - C) 64
 - D) 12
10. Which of the following numbers best approximates $3,076 - 307.6$?
 - A) 300
 - B) 3000
 - C) 30
 - D) 30,000
11. The price of a television was increased from \$240.00 to \$300.00. What is the percent increase in the price of the television?
 - A) 25%
 - B) 10%
 - C) 30%
 - D) 85%
12. $\frac{1}{4} + \frac{12}{4} =$
 - A) $\frac{13}{9}$
 - B) $\frac{13}{11}$
 - C) $\frac{47}{20}$
 - D) $\frac{22}{20}$

D. Exponents and Square Roots

1. If $x = 6$, then $2 + 5x =$
 - A) 13
 - B) 32
 - C) 58
 - D) 3
2. The product of a number n and 12 is 36. Which of the following equations represents this statement?
 - A) $12n = 36$
 - B) $\frac{n}{12} = 36$
 - C) $n - 12 = 36$
 - D) $n + 12 = 36$
3. In the formula $d = r \times t$, d is the distance traveled and t is the time traveled. If $d = 63$ and $t = 9$, then $r =$
 - A) 7
 - B) 567
 - C) $\frac{1}{7}$
 - D) 52
4. If $2t = s + 4$ and $t = 3$, then $s =$
 - A) 2
 - B) 10
 - C) -2
 - D) 1
5. If $\sqrt{b} = 5$, then $b =$
 - A) 2.5
 - B) 25
 - C) 10
 - D) 52
6. $\frac{4c}{8c} =$
 - A) $\frac{1}{2b}$
 - B) $\frac{1}{4}$
 - C) $\frac{1}{2}$
 - D) $\frac{1}{2c}$
7. $5(3 - x) =$
 - A) $8 - x$
 - B) $15x - 3x$
 - C) $15 - 5x$
 - D) $15 - x$
8. $3^{-3} =$
 - A) 3^{15}
 - B) 3^{50}
 - C) 9^{42}
 - D) 9^{13}
9. $(4 \times 8^6) \times (5 \times 8^7) =$
 - A) 3^{15}
 - B) 20×8^{13}
 - C) 20×8^{13}
 - D) 9×16^{13}
10. $(5 \times 10^6) + (7 \times 10^6) =$
 - A) 1.2×10^7
 - B) 1.2×10^{12}
 - C) 1.2×10^{13}
 - D) 1.2×10^{17}
11. $\sqrt{3^2 + 4^2} =$
 - A) 144
 - B) 25
 - C) 7
 - D) 5

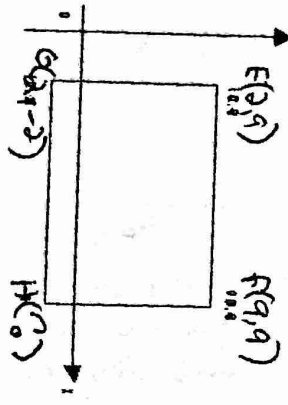
E. Geometry

1. The temperature at noon on each of five successive days is plotted on the graph shown below. Which day had the greatest decrease in noon temperature from that of the previous day?



- A) Wednesday B) Thursday C) Friday D) Monday

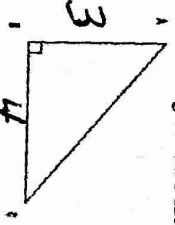
2. What are the coordinates of vertex H of rectangle EFGH shown in the figure below?



- A) (-2, 9) B) (-2, 4) C) (9, 2) D) (9, -2)
 A) 12 B) 18 C) 24 D) 72

3. The perimeter of a rectangle is 36. If the length is 12, what is the area?

4. In the right $\triangle ABC$ shown below, what is the length of AC?

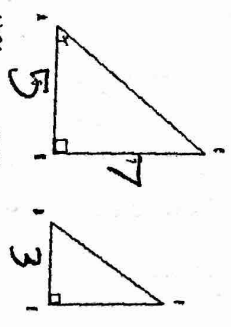


- A) 7 B) 12 C) 5 D) 25

5. What is the diameter of a circle whose area is 64π ?

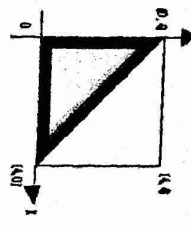
- A) 16π B) 64 C) 8π D) 16

6. Triangles ABC and DEF shown below are similar. What is the length of EF?



- A) $\frac{21}{5}$ B) $\frac{35}{3}$ C) $\frac{15}{7}$ D) 5

7. In the figure shown below, what is the area of the shaded region?



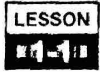
- A) 16 B) 8 C) 12 D) 32

*Pythagorean Theorem
 $a^2 + b^2 = c^2$

*Use proportion

2nd, 3rd, 8th

Name _____ Date _____ Class _____



Solving Equations

Practice and Problem Solving: A/B

Use the guess-and-check method to solve. Show your work.

1. $x + 8 = 11$

2. $5y - 9 = 16$

Solve by working backward. Show your work.

3. $x - 4 = 9$

4. $3y + 4 = 10$

Solve the equation by using the Properties of Equality.

5. $6c + 3 = 45$

6. $11 - a = -23$

7. $\frac{2}{3} + y = \frac{1}{4}$

8. $\frac{7}{8}w = 14$

Solve.

9. Houston, Texas has an average annual rainfall about 5.2 times that of El Paso, Texas. If Houston gets about 46 inches of rain, about how many inches does El Paso get? Round to the nearest tenth.

10. Susan can run 2 city blocks per minute. She wants to run 60 blocks. How long will it take her to finish if she has already run 18 blocks?

11. Michaela pays her cell phone service provider \$49.95 per month for 500 minutes. Any additional minutes used cost \$0.15 each. In June, her phone bill is \$61.20. How many additional minutes did she use?

**Solving Equations****Practice and Problem Solving: C**

Use the guess-and-check method to solve. Show your work.

1. $26 = t - 19$

2. $w - 2 = -43$

Solve by working backward. Show your work.

3. $8n + 6 = 46$

4. $15 - 3y = -3$

Solve the equation by using the Properties of Equality.

5. $2(8 + k) = 22$

6. $m + 5(m - 1) = 7$

7. $-13 = 2b - b - 10$

8. $\frac{2}{3}x - \frac{5}{8}x = 26$

Solve.

9. Sam is moving into a new apartment. Before he moves in, the landlord asks that he pay the first month's rent and a security deposit equal to 1.5 times the monthly rent. The total that Sam pays the landlord before he moves in is \$3275. What is the monthly rent?

10. Mr. Rodriguez invests half his money in land, a tenth in stocks, and a twentieth in bonds. He puts the remaining \$35,000 in his savings account. What is the total amount of money that Mr. Rodriguez saves and invests?

11. A work crew has a new pump and an old pump. The new pump can fill a tank in 5 hours, and the old pump can fill the same tank in 7 hours. Write and solve an equation for the time it will take both pumps to fill one tank if the pumps are used together.
