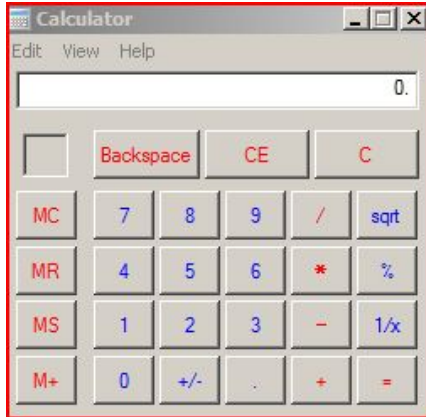


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Instructions: Take this test in a manner most like the actual test will be administered which basically means two things: 1) It is untimed and 2) Calculators are not allowed to be taken into the exam, however one will be available on the screen. So, go ahead and use the one either on your phone (the simple one, not a fancy app) or the one on your computer which should be located in the “accessories” or “start” menu). It should be “4-function” only and look about like this:



Good luck!

Arithmetic

- $\frac{12}{50} =$
 - .024
 - .12
 - 2.86
 - .24
- A football player caught 20 percent of all 45 balls thrown. How many balls did the football player catch?
 - 20
 - 44
 - 22
 - 9

3. $\frac{5}{10} \div \frac{3}{4} =$

- A. $\frac{3}{8}$
- B. $\frac{9}{16}$
- C. $\frac{5}{6}$
- D. $\frac{2}{3}$

4. The measure of two angles of a triangle is 75° and 15° . What is the measure of the third angle?

- A. 65°
- B. 100°
- C. 21°
- D. 90°

5. $3\frac{3}{4} - 2\frac{1}{2} =$

- A. $2\frac{1}{4}$
- B. $3\frac{1}{3}$
- C. 1
- D. $1\frac{1}{4}$

6. Solve for x: $\frac{x}{3} = \frac{6}{9}$

- A. 2
- B. 3
- C. 12
- D. 18

7. $72 + 56 \div (2 + 5) = ?$

- A. 105
- B. 69
- C. 18.3
- D. 80

8. $8.45 + 1.85 + 3.5 \times 2$
- A. 27.6
 - B. 17.3
 - C. 15.8
 - D. 22.25
9. $4^2 + 3^3 = ?$
- A. 16,807
 - B. 17
 - C. 43
 - D. 2,985,984
10. On four tests, Ernest scored 19, 20, 41, and 4. What is his average test score?
- A. 84
 - B. 41
 - C. 19.5
 - D. 21
11. $\frac{10}{21} = ?$
- A. .476
 - B. 2.1
 - C. .21
 - D. .0476
12. What is $\frac{25,691}{271}$ to the nearest integer?
- A. 109
 - B. 95
 - C. 82
 - D. 22
13. $54.7 \times 10^{-2} =$
- A. 5.47
 - B. .0547
 - C. .547
 - D. 547

14. Four out five numbers have the sum of 38. If the average is 50, what is the fifth number?
- A. 12
 - B. 212
 - C. 50
 - D. 24
15. Rocco bought $4\frac{3}{4}$ feet of glass to build a box. If he uses $\frac{5}{6}$ of a foot of the glass to build the box, how much will he have left?
- A. $\frac{47}{12}$
 - B. $\frac{16}{12}$
 - C. $\frac{1}{6}$
 - D. $\frac{32}{24}$
16. $3.45 \times 1.2 = ?$
- A. 45.6
 - B. .414
 - C. .456
 - D. 4.14
17. $\sqrt{4} + \sqrt{25} = ?$
- A. 7
 - B. 5.4
 - C. 7.3
 - D. 10
18. $\frac{3}{4} + \left(\frac{2}{3} \times \frac{1}{2}\right) - \left(\frac{2}{3} - \frac{1}{2}\right) = ?$
- A. $\frac{3}{4}$
 - B. $\frac{11}{12}$
 - C. $\frac{5}{6}$
 - D. $-\frac{11}{24}$

19. Kapono is buying enough wood to make a rectangular floor of 8 feet by 6 feet. If each square foot of the floor costs \$1.50, how much will the floor cost Kapono?
- A. \$72
 - B. \$21
 - C. \$15.50
 - D. \$69
20. A bag of marbles contains blue marbles, red marbles, and mahogany marbles. If the bag is $\frac{1}{2}$ blue marbles and $\frac{1}{3}$ red marbles, what fraction of the marbles in the bag are mahogany?
- A. $\frac{1}{5}$
 - B. $\frac{3}{4}$
 - C. $\frac{5}{6}$
 - D. $\frac{1}{6}$

Elementary Algebra

- $\sqrt{2} \times \sqrt{18} = ?$
 - $\sqrt{20}$
 - 6
 - 20
 - $\sqrt{6}$

- If A represents the amount of bottles bought for \$3 each and B represents the amount of plates bought for \$10 each, which of the following equations represent the total value of a purchase of bottles and plates in dollars?
 - $3A+10B$
 - $3(A+B)$
 - $10A+3B$
 - $10(A+B)$

- $(4x - 3y)^2 = ?$
 - $16x^2 - 9y^2$
 - $16x^2 + 9y^2$
 - $16x^2 - 12xy + 9y^2$
 - $16x^2 - 24xy + 9y^2$

- $\frac{5-(-4)}{-3} = ?$
 - $-\frac{1}{3}$
 - 3
 - $\frac{1}{3}$
 - 3

- What is the value of $3x^2 + 2xy - 2y^2$ when $x = 2$ and $y = -4$?
 - 36
 - 36
 - 24
 - 24

6. If $6x - 3 = 5$, then $x =$

A. $-\frac{3}{2}$

B. $\frac{1}{3}$

C. $\frac{23}{6}$

D. $\frac{4}{3}$

7. If $x > 3$ then $\frac{x^2+5x+6}{x^2-9} =$

A. $\frac{3}{2}$

B. $\frac{x+2}{x-3}$

C. $\frac{x-2}{x-3}$

D. $\frac{x+5}{x+2}$

8. If $x \neq 0$, then $\frac{y}{2x} + \frac{4y}{2x} - \frac{3y}{4x} =$

A. $\frac{7y}{4x}$

B. $\frac{2y}{4x}$

C. $\frac{13y}{4x}$

D. $\frac{29y}{4x}$

9. $4x+18y=4$

$2x+9y=5$

How many solutions (x,y) are there to the system of equations above?

A. None

B. One

C. Two

D. More than two

10. $10 - \frac{2}{3}x \geq 14$

Which of the following inequalities is equivalent to the inequality shown above?

- A. $x \geq 6$
- B. $x \geq 36$
- C. $x \leq 36$
- D. $x \leq -6$

11. $\frac{2 - (-10)}{-6} =$

- A. -2
- B. 2
- C. $-\frac{4}{3}$
- D. $\frac{4}{3}$

12. A rectangular carpet has an area of 60 square feet. If the width of the carpet is 4 feet less than the length, what is the perimeter, in feet, of the carpet?

- A. 60
- B. 36
- C. 45
- D. 32

13. On her first day of gardening, Giselle take 5 hours to plant a certain number of pots. The next day, Giselle plants the same amount of pots but in 3 hours. If her average rate of potting plants on the first day is W pots per hour, what is her average rate of potting on the second day?

- A. $\frac{3}{5}W$ pots per hour
- B. $3(W - 1)$ pots per hour
- C. $\frac{5}{3}W$ pots per hour
- D. $5(W - 1)$ pots per hour

14. $\frac{12x^5 + 4x^3}{4x^2} =$

- A. $3x^3 + x$
- B. $3x^4$
- C. $3x^{\frac{5}{2}} + x^{\frac{3}{2}}$
- D. $11x^4$
- E.

15. Which of the following is a factor of both $x^2 - 4x + 4$ and $x^2 + x - 6$?
- A. $x - 3$
 - B. $x - 2$
 - C. $x + 2$
 - D. $x + 3$
16. For which of the following equations are $x = 6$ and $x = -6$ both solutions?
- A. $x^2 + 36 = 0$
 - B. $x^2 + 12x - 36 = 0$
 - C. $x^2 - 36 = 0$
 - D. $x^2 + 12x + 36 = 0$
17. Which of the following lists of numbers of numbers is ordered from greatest to least?
- A. $\frac{3}{2}, \frac{2}{3}, -\frac{2}{3}, -\frac{3}{2}$
 - B. $\frac{3}{2}, \frac{2}{3}, -\frac{3}{2}, -\frac{2}{3}$
 - C. $-\frac{3}{2}, -\frac{2}{3}, \frac{2}{3}, \frac{3}{2}$
 - D. $-\frac{3}{2}, \frac{3}{2}, \frac{2}{3}, -\frac{2}{3}$
18. $-4(5 - 6) - 5(2 - 4) =$
- A. 14
 - B. 6
 - C. -21
 - D. 21
19. If $3(2x - 4) = 6$ then $x =$
- A. 3
 - B. $\frac{5}{3}$
 - C. 12
 - D. 4
20. What is the value of the expression $4x^3 + 3x^2 - 12x + 2$ when $x = 2$?
- A. 32
 - B. 20
 - C. 28
 - D. 22

College-Level Mathematics

1. If $\log_{10} x = 2$, then $x =$
 - A. 20
 - B. 100
 - C. 5
 - D. $\frac{1}{5}$

2. If θ is an acute angle and $\sin \theta = \frac{1}{2}$, then $\cos \theta =$
 - A. $\frac{1}{2}$
 - B. 2
 - C. $\frac{\sqrt{3}}{2}$
 - D. 0

3. An equation of the line that contains the origin and the point (3,6) is
 - A. $3x - 6 = y$
 - B. $\frac{1}{2}x = y$
 - C. $2x = y$
 - D. $3x - 3 = y$

4. If $c \neq d$ and $\frac{1}{x} + \frac{1}{c} = \frac{1}{d}$ then $x =$
 - A. $\frac{1}{d-c}$
 - B. $d - c$
 - C. $\frac{dc}{c-d}$
 - D. $\frac{1}{dc}$

5. If $f(x) = 6x - 2$ and $g(x) = \frac{x+3}{3}$, then $f(g(x)) =$
 - A. $2x + 4$
 - B. x
 - C. $x + 1$
 - D. $\frac{6x+1}{3}$

6. Which of the following equations is a straight line parallel to the graph of $y = 4x$?
- A. $4x - y = 3$
 - B. $4x + y = 10$
 - C. $4x - 2y = 6$
 - D. $x - 2y = 4$
7. $8y(3y - 2) + (6y - 4) =$
- A. $(8y - 1)(3y - 2)$
 - B. $(8y + 1)(6y - 4)$
 - C. $16y(2y - 3)$
 - D. $(8y + 2)(3y - 2)$
8. If $2^x - 3 = 5$, then $x =$
- A. 4
 - B. 3
 - C. 1
 - D. $\frac{1}{4}$
9. $3^{\frac{7}{2}} - 3^{\frac{3}{2}} =$
- A. 3^2
 - B. 3^5
 - C. $18\sqrt{3}$
 - D. $24\sqrt{3}$
10. The admission fee at a movie theater is \$1.50 for children and \$4.00 for adults. The movie theater can have maximum of 2200 people and on a particular day when the theater is full, \$5050 is collected. How many adults attended on this day?
- A. 1500
 - B. 700
 - C. 2200
 - D. 550

11. The two legs of a right triangle are 8 inches and 6 inches respectively. What is the length of the triangle's hypotenuse?
- A. 7
 - B. 10
 - C. 8
 - D. 4
12. What is i^{16} equal to?
- A. -1
 - B. 1
 - C. i
 - D. $-i$
13. What is the next term in the geometric sequence 128,32 ,8...?
- A. 4
 - B. 1
 - C. 8
 - D. 2
14. $\begin{bmatrix} 2 & 5 \\ 9 & 1 \end{bmatrix} - \begin{bmatrix} 1 & 4 \\ 6 & 2 \end{bmatrix} =$
- A. $\begin{bmatrix} 2 & 4 \\ -3 & 1 \end{bmatrix}$
 - B. $\begin{bmatrix} 1 & 1 \\ 3 & -1 \end{bmatrix}$
 - C. $\begin{bmatrix} 4 & 1 \\ 1 & 2 \end{bmatrix}$
 - D. $\begin{bmatrix} 3 & 2 \\ 8 & 4 \end{bmatrix}$
15. What equation is a straight line perpendicular to the graph $y = 6x + 2$?
- A. $y = 6x$
 - B. $y = \frac{1}{6}x$
 - C. $y = \frac{1}{6}x + 2$
 - D. $y = -\frac{1}{6}x + 23$

16. If θ is an acute angle and $\tan \theta = 1$ then $\sec \theta =$
- A. 1
 - B. $\frac{\sqrt{2}}{2}$
 - C. $\sqrt{2}$
 - D. 2
17. $4(5x + 2) + x(5x + 2) =$
- A. $(4 + x)(5x + 2)$
 - B. $(4 + x) + (5x + 2)$
 - C. $4x(5x + 2)$
 - D. $5x(4x + 2)$
18. If $\log_2 x = 4$, then $x =$
- A. 4
 - B. 2
 - C. 16
 - D. 8
19. What is the area of a circles sector at an angle of 22° and has a radius of 3?
- A. $.55\pi$
 - B. $.62\pi$
 - C. 1.98π
 - D. $.46\pi^2$
20. If $f(x) = 5^x$ and $g(x) = x^2$, then what is $f(g(x))$?
- A. $5x$
 - B. $25x^2$
 - C. 10^x
 - D. 5^{x^2}