Sample Test 2

Name_____

In the real test you will have 10 questions and the following rules:

You have 75 minutes to complete the test below. The usage of books or notes, or communication with other students is not allowed. Ask me if you have questions.

This is a multiple choice test.You do not have to justify your answer. If , however, you are not sure that your selection is correct, put a star (*) in front of the question number, and include your calculations on an attached sheet. **I will look at an attached calculation only if I see a star in front of the question number.**
–If you mark an incorrect answer but your calculations contain only minor mistakes, you will get up to 75% credit for the problem.
–Beware: if you instruct me to look at a severely incorrect calculation, you will lose at least 50% of the credit, **even if by chance you mark the correct answer.** *(No credit is given for an incorrect answer and totally incorrect calculations.)*
You get full credit if you mark the correct answer, and mark no star, or if you mark the correct answer, express doubt by marking a star, but I find your calculations perfectly correct.

Solve the equation.

1) $|b + 9| - 3 = 6$

     A) $\{-18, 0\}$ B) $\{0\}$ C) $\{0, 18\}$ D) No solution

Solve the inequality.

2) $|x - 9| > 0$

     A) No solution   B) $(-\infty, 9) \cup (9, \infty)$ C) $(9, -9)$ D) $(9, \infty)$

Solve the equation.

3) $4d^2 + 14d + 12 = 0$

     A) $\left\{-\dfrac{1}{2}, -\dfrac{3}{2}\right\}$ B) $\left\{2, \dfrac{3}{2}\right\}$ C) $\left\{-2, -\dfrac{3}{2}\right\}$ D) $\left\{\dfrac{1}{2}, \dfrac{2}{3}\right\}$

Solve by completing the square.

4) $a^2 + 8a - 9 = 0$

     A) $\{-1, 9\}$ B) $\{0, -9\}$ C) $\{1, -9\}$ D) $\left\{\sqrt{-9}, -\sqrt{-9}\right\}$

Use the quadratic formula to solve the equation.

5) $5r^2 + 22r = -14$

     A) $\left\{\dfrac{-11 \pm \sqrt{191}}{5}\right\}$ B) $\left\{\dfrac{-11 \pm \sqrt{51}}{10}\right\}$ C) $\left\{\dfrac{-22 \pm \sqrt{51}}{5}\right\}$ D) $\left\{\dfrac{-11 \pm \sqrt{51}}{5}\right\}$

Use the discriminant to determine the number of solutions.

6) $4x^2 - 4x + 1 = 0$

     A) Exactly one solution   B)No solutions

     C) Two different solutions   D)Three different solutions

Find the number needed to complete the square of the expression.

7) $x^2 - \dfrac{2}{3}x$

    A) $\dfrac{1}{9}$ B) $\dfrac{4}{9}$ C) $\dfrac{2}{9}$ D) $-\dfrac{2}{9}$

Solve the equation.

8) $\sqrt{q+1} = 7$

    A) {64}   B) {49}   C) {48}   D) {50}

9) $\sqrt{3x+1} = 3 + \sqrt{x-4}$

    A) No solution   B) {-1}   C) {-5, -8}   D) {5, 8}

10) $2 + \dfrac{5}{3z-1} = \dfrac{-2}{(3z-1)^2}$

    A) $\{-2, -\dfrac{1}{2}\}$ B) $\{-\dfrac{1}{3}, 0\}$ C) $\{-\dfrac{1}{3}, -\dfrac{1}{6}\}$ D) $\{-\dfrac{1}{3}, \dfrac{1}{6}\}$

Use the distance formula to find the distance between the pair of points.

11) $(4, -1)$ $(6, -5)$

    A) $12\sqrt{3}$ B) $2\sqrt{5}$ C) 6   D) 12

Find the indicated point.

12) Find the midpoint of the line segment whose endpoints are $(9, 4)$ and $(7, 8)$.

    A) $(16, 12)$ B) $(2, -4)$ C) $(6, 8)$ D) $(8, 6)$

13) If $(-5, 9)$ is the endpoint of a line segment, and $(-3, 8)$ is its midpoint, find the other endpoint.

    A) $(-9, 11)$ B) $(-7, 13)$ C) $(-1, 10)$ D) $(-1, 7)$

Provide an appropriate response.

14) Give the equation for a circle.
Center at $(4, -6)$, radius 5

    A) $(x-6)^2 + (y+4)^2 = 5$ B) $(x-4)^2 + (y+6)^2 = 25$
    C) $(x+6)^2 + (y-4)^2 = 5$ D) $(x+4)^2 + (y-6)^2 = 25$

Find the center and the radius of the circle.

15) $x^2 - 12x - 8y^2 + 36 = 0$

    A) $(6, 4)$, $r = 4$ B) $(-6, -4)$, $r = 16$ C) $(4, 6)$, $r = 4$ D) $(-4, -6)$, $r = 16$

Find the slope of the line that goes through the pair of points.

16) $(-8, -5)$ and $(1, 9)$

    A) Undefined   B) 4   C) $1\dfrac{9}{5}$ D) $1\dfrac{5}{9}$

Write an equation in standard form for a line satisfying the given conditions.

17) Through $(3, 2)$; $m = -\dfrac{3}{7}$

    A) $7x + 3y = -23$ B) $3x - 7y = 23$ C) $3x + 7y = 23$ D) $3x + 7y = -23$

Write the equation in slope–intercept form.

18) $5x - 3y = 4$

   A) $y = \dfrac{5}{3}x - \dfrac{4}{3}$
   B) $y = \dfrac{3}{5}x + \dfrac{4}{5}$
   C) $y = \dfrac{5}{3}x + \dfrac{4}{3}$
   D) $y = 5x - 4$

Write an equation for the line.

19) Through $(-7, -10)$ perpendicular to $-7x - 8y = 73$

   A) $-8x - 7y = 73$
   B) $-7x + 8y = -14$
   C) $-8x + 7y = -14$
   D) $-8x - 7y = -14$

Decide whether the relation defines a function.

20) $\{(-5, -1), (-2, 6), (4, -9), (4, 1)\}$

   A) Not a function
   B) Function

Give the domain of the function.

21) $f(x) = \sqrt{8 - x}$

   A) $x > \sqrt{17}$
   B) $x \leq 8$
   C) $x \neq 8$
   D) All real numbers

22) $f(x) = \dfrac{(x + 2)(x - 2)}{x^2 - 4}$

   A) $x \neq 2, x \neq -2$
   B) $x \neq 4$
   C) All real numbers
   D) $x > 4$

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