

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) {0}

B) {-18, 0}

C) No solution

D) {0, 18}

2) $\sqrt{2x + 3} - \sqrt{x + 1} = 1$

A) {3}

B) {-3, -1}

C) No solution

D) {3, -1}

Solve the inequality.

3) $|h - 2| + 5 \leq 14$

A) $7 \leq h \leq 14$

B) No solution

C) $-7 \geq h \geq 11$

D) $-7 \leq h \leq 11$

4) $|x - 4| \leq 0$

A) $x = 4$

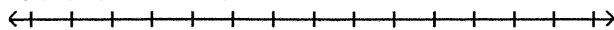
B) $x < 4$

C) No solution

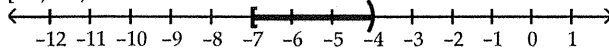
D) $x = -4$

Solve the inequality. Graph the solution set.

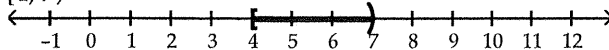
5) $-31 \leq -5c + 4 < -16$



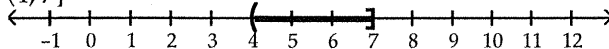
A) $[-7, -4)$



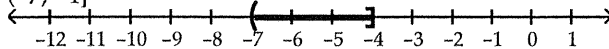
B) $[4, 7)$



C) $(4, 7]$



D) $(-7, -4]$



List the intercepts for the equation.

6) $x^2 + y - 25 = 0$

- A) (0, 25), (-5, 0), (5, 0) B) (0, -5), (0, 5) C) (-5, 0), (5, 0) D) (25, 0), (0, -5), (0, 5)

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

7) (-2, -4) and (6, 9)

- A) Undefined B) 5 C) $1\frac{8}{5}$ D) $1\frac{5}{8}$

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

8) Through (2, 4); $m = -\frac{4}{7}$

- A) $7x + 4y = -36$ B) $4x - 7y = 36$ C) $4x + 7y = 36$ D) $4x + 7y = -36$

Write the equation in slope-intercept form.

9) $5x - 3y = 4$

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

Write an equation for the line.

10) Through (1, 8) perpendicular to $-7x - 2y = -25$

- A) $-2x - 7y = -25$ B) $-7x + 2y = 54$ C) $-2x + 7y = 54$ D) $-2x - 7y = 54$

Decide whether the relation defines a function.

11) $\{(-5, -4), (-1, 2), (1, -5), (1, 3)\}$

- A) Not a function B) Function

Give the domain and range of the equation and indicate whether or not it is a function.

12) $y = -8x^2 + 7$

- A) $D = (-\infty, \infty)$, $R = (7, \infty)$, yes B) $D = (-\infty, \infty)$, $R = (-\infty, \infty)$, no
C) $D = (-\infty, \infty)$, $R = (-\infty, \infty)$, yes D) $D = (-\infty, \infty)$, $R = (-\infty, 7]$, yes

Ignore range

13) $x = y^2 + 9$

- A) $D = [9, \infty)$, $R = (-\infty, \infty)$, no B) $D = (-\infty, \infty)$, $R = [9, \infty)$, yes
C) $D = (-\infty, \infty)$, $R = (-\infty, \infty)$, yes D) $D = (-\infty, \infty)$, $R = (-\infty, \infty)$, no

Find the requested function value.

14)

If $f(x) = \begin{cases} x^3 & \text{if } x < 0 \\ 2x + 5 & \text{if } x \geq 0 \end{cases}$ find $f(-2)$

- A) -8 B) 8 C) 1 D) 9

Give the domain of the function.

15) $f(x) = \sqrt{4 - x}$

- A) $x > \sqrt{18}$ B) $x \leq 4$ C) $x \neq 4$ D) All real numbers

$$16) f(x) = \frac{(x+3)(x-3)}{x^2-9}$$

A) $x \neq 3, x \neq -3$

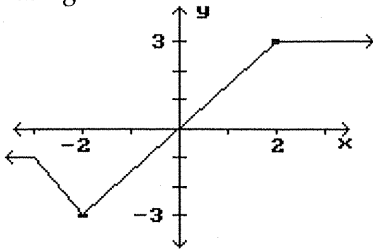
B) $x \neq 9$

C) All real numbers

D) $x > 9$

Identify the intervals where the function is changing as requested.

17) Increasing



A) $(-3, \infty)$

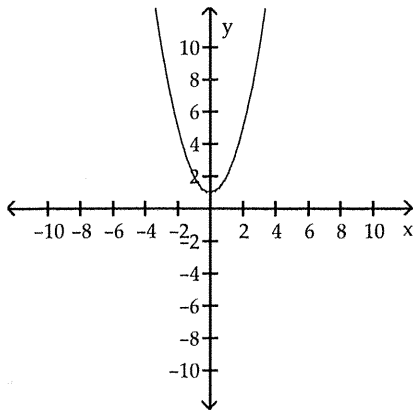
B) $(-2, \infty)$

C) $(-3, 3)$

D) $(-2, 2)$

The graph of a function is given. Decide whether it is even, odd, or neither.

18)



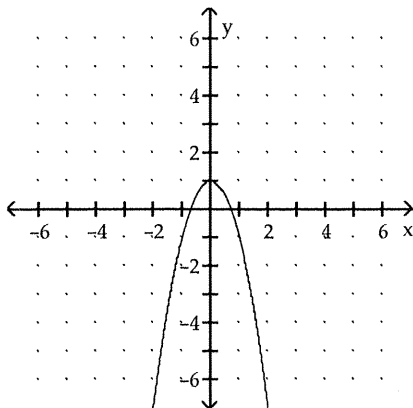
A) Neither

B) Odd

C) Even

Match the correct function to a given graph.

19)



A) $f(x) = -2x^2 - 1$

B) $f(x) = -2x^2 + 1$

C) $f(x) = -2x^2$

D) $f(x) = 1 - x^2$

Tell whether the graph of the function opens upward or downward and whether the graph is wider, narrower, or the same as $f(x) = x^2$.

20) $f(x) = -9x^2$

- A) Downward, wider
C) Upward, narrower

- B) Upward, wider
D) Downward, narrower

Find the requested value.

21) $f(x) = -3x - 1$, $g(x) = -5x^2 + 2x + 4$

Find $\left(\frac{f}{g}\right)(-4)$.

A) $-\frac{13}{84}$

B) $\frac{11}{84}$

C) $-\frac{11}{92}$

D) $-\frac{11}{84}$

Find the indicated composite for the pair of functions.

22) $(g \circ f)(x)$: $f(x) = 4x^2 + 3x + 5$, $g(x) = 3x - 3$

A) $4x^2 + 3x + 2$

B) $4x^2 + 9x + 12$

C) $12x^2 + 9x + 18$

D) $12x^2 + 9x + 12$

Answer Key

Testname: STEST2.TST

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