Practice 1 Date: _____ Name_____.

SHORT ANSWER. Write the word or phrase that best completes each statement or answers the question.

Solve the equation.

1) $-[8x + (2x + 7)] = 1 - (9x + 3)$ 1) _____

2) $\frac{f}{4} - 5 = 1$ 2) _____

3) $\frac{2x}{5} - \frac{x}{3} = 4$ 3) _____

Solve the equation for y.

4) $-5x + 7y = 3$ 4) _____

Find the domain of the function.

5) $f(x) = 8x + 6$ 5) _____

6) $f(x) = x^2 + 3$ 6) _____

Find the domain.

7) $f(x) = \frac{-1}{-6 - x}$ 7) _____

Find the domain of the function.

8) $g(x) = \frac{3x}{x^2 - 64}$ 8) _____

9) $f(x) = \frac{x}{x^2 + 12}$ 9) _____

10) $h(x) = \frac{x - 4}{x^3 - 64x}$ 10) _____

11) $f(x) = \sqrt{10 - x}$ 11) _____

12) $\frac{x}{\sqrt{x - 2}}$ 12) _____

Determine the slope and the y–intercept.

13) $2x - 6y = -12$ 13) _____

14) $14y + 3x + 8 = 2 + 3x$ 14) _____

Find the slope of the line containing the two given points.

15) (–4, –5) and (9, 3) 15) _____

If possible, determine the slope.

16) $x = -3$ 16) _____

17) $y = \frac{2}{3}$ 17) _____

18) $4 - 5x = 5 - 2x$ 18) _____

Find a linear function whose graph has the given slope and y –intercept.

19) Slope $\frac{1}{3}$, y–intercept (0, 2) 19) _____

Find an equation of the line having the specified slope and containing the indicated point. Write your answer in slope–intercept form.

20) $m = -8$; (6, –3) 20) _____

21) $m = -\frac{3}{5}$; (10, –2) 21) _____

Find an equation of the line containing the given pair of points

22) (6, –6) and (–7, 7) 22) _____

23) (2, –3) and (–5, 5) 23) _____

Find an equation of the line having the specified slope and containing the indicated point. Write your answer in slope–intercept form.

24) $m = -4$; (0, 1.1) 24) _____

Find an equation of the line containing the given pair of points

25) (–4, –3) and (–3, –1) 25) _____

26) (0, 0) and (7, –8) 26) _____

27) (2, –2) and (9, 6) 27) _____

Write an equation of the line described.

28) Through (–5, –2), parallel to $3x + 5y = 5$ 28) _____

Find the product.

29) $2x(3x - 1)(6x + 8)$ 29) _____

Factor the polynomial using a common factor with a negative coefficient.

30) $-3x^2 - 24x^5 + 12x^7$ 30) _____

Factor the trinomial completely.

31) $-x^2 - 8x + 20$ 31) _____

32) $-p^2 + 13p - 42$ 32) _____

Factor the polynomial completely.

33) $81x^2 - 4$ 33) _____

Find all solutions by factoring.

34) $m^2 - 7m + 10 = 0$ 34) _____

35) $2x^2 + 15x = -25$ 35) _____

Solve the problem.

36) A rectangular Persian carpet has a perimeter of 204 inches. The length of the carpet is 30 in. more than the width. What are the dimensions of the carpet? 36) _____

37) A car rental company has two rental rates. Rate 1 is \$30 per day plus \$.12 per mile. Rate 2 is \$60 per day plus \$.06 per mile. If you plan to rent for one day, how many miles would you need to drive to pay less by taking Rate 2? 37) _____

Graph the function.

38) $f(x) = \begin{cases} 5, & \text{for } x \le 4, \\ x+1, & \text{for } x > 4 \end{cases}$ 38) _____

39) $f(x) = \begin{cases} 3 - x, & \text{for } x \le 2, \\ 1 - 2x, & \text{for } x > 2 \end{cases}$ 39) _____

Evaluate the function.

40) Given $f(x) = 3x^2 - 2x + 1$, find $f(k - 1)$. 40) _____

41) Given $f(x) = \dfrac{4x}{3x - 4}$, find $f(-3)$. 41) _____

42) For $f(x) = x^2 + 5x$, find $\dfrac{f(x + h) - f(x)}{h}$. 42) _____

43) For $f(x) = \begin{cases} 3x + 2, & \text{for } x < 2 \\ 11, & \text{for } x = 2 \\ x^2 + 4, & \text{for } x > 2 \end{cases}$, find $f(-1)$ and $f(6)$. 43) _____

44) For $f(x) = \begin{cases} -5x - 1, & \text{for } x < 0 \\ 14, & \text{for } 0 \le x \le 3 \\ \frac{1}{3}x + 3, & \text{for } x > 3 \end{cases}$, find f(0) and f(12). 44) _____

Compute and simplify the difference quotient $\frac{f(x+h) - f(x)}{h}$, $h \neq 0$.

45) $f(x) = 5x^2 + 7x$ 45) _____

Find the function value.

46) Given that $f(x) = 5x^2 - 2x$, find f(t + 2). 46) _____

Solve the problem.

47) Find f(k) when $f(x) = 3x^2 + 4x + 5$. 47) _____

48) Find g(a + 1) when g(x) = 3x + 2. 48) _____

49) Find $f(\frac{1}{3})$ if $f(x) = -5x^2 + 5x + 7$. 49) _____

Write with radicals. Assume that all variables represent positive real numbers.

50) $x^{1/7}$ 50) _____

51) $m^{8/3}$ 51) _____

52) $7k^{-2/3}$ 52) _____

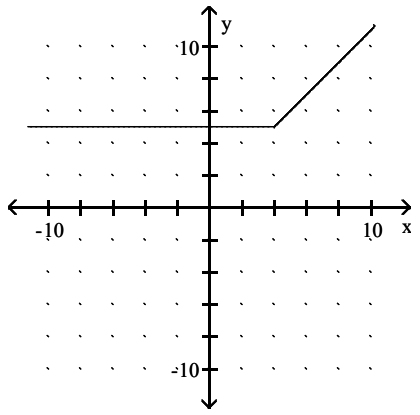
53) $2k^{4/5}$ 53) _____

Use the rules of exponents to simplify the expression. Write the answer with positive exponents. Assume that all variables represent positive real numbers.

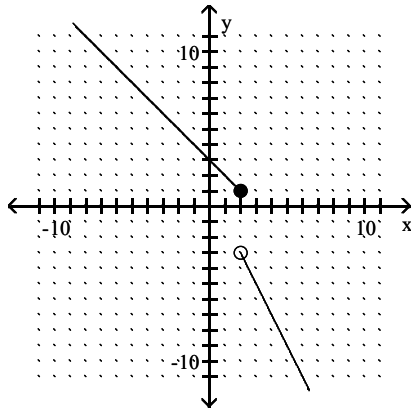
54) $x^{1/4} \cdot x^{3/4}$ 54) _____

Answer Key
Testname:

1) $\{-5\}$
2) {24}
3) {60}
4) $y = \frac{3 + 5x}{7}$
5) all real numbers
6) all real numbers
7) {x| x is a real number and $x \neq -6$}
8) {x| $x \neq -8, 8$}
9) all real numbers
10) {x| $x \neq -8, 0, 8$}
11) {x| $x \leq 10$}
12) {x| $x > 2$}
13) Slope $\frac{1}{3}$, y–intercept (0, 2)
14) Slope 0, y–intercept $(0, -\frac{3}{7})$
15) $\frac{8}{13}$
16) Not defined
17) 0
18) Not defined
19) $f(x) = \frac{1}{3}x + 2$
20) $y = -8x + 45$
21) $y = -\frac{3}{5}x + 4$
22) $y = -x$
23) $y = -\frac{8}{7}x - \frac{5}{7}$
24) $y = -4x + 1.1$
25) $y = 2x + 5$
26) $y = -\frac{8}{7}x$
27) $y = \frac{8}{7}x - \frac{30}{7}$
28) $y = -\frac{3}{5}x - 5$
29) $36x^3 + 36x^2 - 16x$
30) $-3x^2(1 + 8x^3 - 4x^5)$
31) $-(x + 10)(x - 2)$
32) $-(p - 6)(p - 7)$
33) $(9x + 2)(9x - 2)$
34) {5, 2}
35) $\left\{-\frac{5}{2}, -5\right\}$
36) Width: 36 in.; length: 66 in.
37) more than 500 miles
38)



39)



40) $3k^2 - 8k + 6$
41) $\frac{12}{13}$
42) $2x + h + 5$
43) $f(-1) = -1, f(6) = 40$
44) $f(0) = 14, f(12) = 7$
45) $10x + 5h + 7$
46) $5t^2 + 18t + 16$
47) $3k^2 + 4k + 5$
48) $3a + 5$
49) $\frac{73}{9}$
50) $\sqrt[7]{x}$
51) $\left(\sqrt[3]{m}\right)^8$
52) $\frac{7}{\left(\sqrt[3]{k}\right)^2}$
53) $2\left(\sqrt[5]{k}\right)^4$
54) x