

Name _____

SHORT ANSWER. Write the word or phrase that best completes each statement or answers the question.**Solve the compound inequality. Express the solution using interval notation. Graph the solution set**

1) $9x - 6 < 3x$ or $-3x \leq -9$

1) _____

**Solve the absolute value equation.**

2) $|7x + 3| = 5$

2) _____

Solve the inequality. Graph the solution set, and state the solution set in interval notation.

3) $|x - 12| > 17$

3) _____

Find the domain of the function.

4) $h(x) = \frac{1}{5x + 4}$

4) _____

Find the function value.

5) Find $f(3)$ when $f(x) = x^2 - 3x - 1$.

5) _____

Use the given conditions to write an equation for the line in slope-intercept form.

6) Passing through $(4, 5)$ and perpendicular to $y = \frac{1}{4}x + 9$

6) _____

Solve the system of three linear equations containing three unknowns.

$$7) \begin{cases} 5x + 2y + z = -11 \\ 2x - 3y - z = 17 \\ 7x + y + 2z = -4 \end{cases}$$

7) _____

Solve the problem.

- 8) A vendor sells hot dogs, bags of potato chips, and soft drinks. A customer buys 5 hot dogs, 5 bags of potato chips, and 5 soft drinks for \$21.25. The price of a hot dog is \$0.75 more than the price of a bag of potato chips. The cost of a soft drink is \$2.00 less than the price of two hot dogs. Find the cost of each item.

8) _____

Divide using long division.

9) $\frac{p^2 + 3p - 22}{p + 7}$

9) _____

10) $\frac{3m^3 + 15m^2 - 12m + 36}{m + 6}$

10) _____

Factor the sum or difference of two cubes completely.

11) $x^3 + 27$

11) _____

Factor completely, or state that the polynomial is prime.

12) $x^2 + 19x + 20$

12) _____

13) $3x^3 - 300x$

13) _____

Simplify the complex rational expression using Method 2.

14)
$$\frac{\frac{1}{x} + \frac{3}{x^2}}{x + \frac{27}{x^2}}$$

14) _____

Solve the equation.

15) $\frac{1}{b} + \frac{1}{b-3} = \frac{b-2}{b-3}$

15) _____

Solve the work problem.

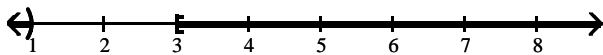
- 16) One pump can drain a pool in 11 minutes. When a second pump is also used, the pool only takes 3 minutes to drain. How long would it take the second pump to drain the pool if it were the only pump in use? (Round your answer to the nearest tenth, if necessary.)

16) _____

Answer Key

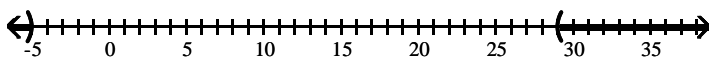
Testname: MATH 80 FINAL PRACTICE

1) $(-\infty, 1) \cup [3, \infty)$



2) $\left\{\frac{2}{7}, -\frac{8}{7}\right\}$

3) $(-\infty, -5) \cup (29, \infty)$



4) $\{x \mid x \neq -\frac{4}{5}\}$

5) -1

6) $y = -4x + 21$

7) $(0, -6, 1)$

8) \$1.75 for a hot dog; \$1.00 for a bag of potato chips; \$1.50 for a soft drink

9) $p - 4 + \frac{6}{p+7}$

10) $3m^2 - 3m + 6$

11) $(x+3)(x^2 - 3x + 9)$

12) Prime

13) $3x(x+10)(x-10)$

14) $\frac{1}{x^2 - 3x + 9}$

15) $b = 1$

16) 4.1 minutes