

Answers

1. Answers may vary. Example,  $-\frac{3}{2}$  or  $-7$ .

This problem may be reviewed in most text books under the topic "Sets of Real Numbers."

2. 1

This problem involves the correct use of order of operations and basic arithmetic.

3. a)  $3x^8$

b)  $\frac{x^{12}}{125y^6z^{24}}$

c)  $\frac{x^{3/2}y^{2/3}}{3}$

d) 4

The exercises here make use of the integer and rational exponent rules.

4. a)  $x^2y^3 - 5xy$

b)  $6x^2 - 13x - 28$

This problem involves subtracting and multiplying polynomials.

5. a)  $(3x + 2)(x - 4)$

b)  $(6x + 7y)(6x - 7y)$

This exercise has factoring of a trinomial and difference of two perfect squares.

6. a)  $6x^2y \sqrt{6xy}$

b)  $2w^2z \sqrt[3]{6z^2}$

Question 6 is simplifying radicals.

7. a) -17

b)  $-n^2 + 3n - 7$

This question tests the ability to use function notation.

8.  $\frac{5(3 + \sqrt{2})}{7}$

The topic of rationalizing denominators is usually included with simplifying and operations with radicals.

9.  $x = \frac{1}{2}$

This is a linear equation which requires the use of the distributive property to first simplify.

10.  $x = \frac{3}{2}$  or  $x = -1$

The quadratic equation may be solved by factoring and could be reviewed in a chapter on polynomials.

11.  $x = -3, -4$

Solving rational equations is taught in a chapter devoted to the to the topic rational functions.

12.  $x = 9, x \neq 2$

Solving radical equations may be reviewed in a chapter focusing on radicals.

13.  $x = 1$  or  $x = 5$

Absolute value equations are usually included in a section of solving absolute value equations and inequalities.

14.  $y \leq 1$  or  $(-\infty, -1]$

This is a linear inequality.

15.  $-4 < x \leq 1$ , or  $(-4, 1]$

This is called a compound inequality.

16.  $x \leq -1$  or  $x > 3$ ,  $(-\infty, -1] \cup (3, \infty)$

This is called a compound inequality.

17.  $-\frac{7}{3} < x < 1$ ,  $(-\frac{7}{3}, 1)$   
See # 13

18.  $x \geq 3$  or  $x \leq z$ ,  $(-\infty, 2] \cup [3, \infty)$   
see # 13

19. 68 m by 93 m

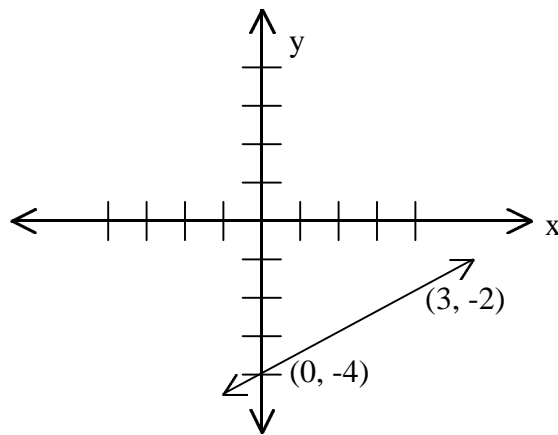
A student should know  $\text{perimeter} = 2(\text{length}) + 2(\text{width})$  then solve a linear equation.

20.  $y = -3x + 5$

This topic may be reviewed in a section on linear functions. Students must know the formula for finding slope and the slope/intercept form of a linear equation.

21.  $m = \frac{2}{3}$ , y - intercept (0, -4)

This problem requires students to be able to plot points in the Cartesian plane and know how to determine which points constitute this linear function.



Problems 4, 5, and 10 would all be reviewed in a chapter on polynomials.

Problems 6, 8, and 12 are all classified as problems with radicals.