Find the difference.

1) [17 - (-15)] - [12 + (-19)]

2) -13 - [(6 - 1) - (-5 - 1)]

Write the fraction in lowest terms.

3) $\dfrac{42}{90}$
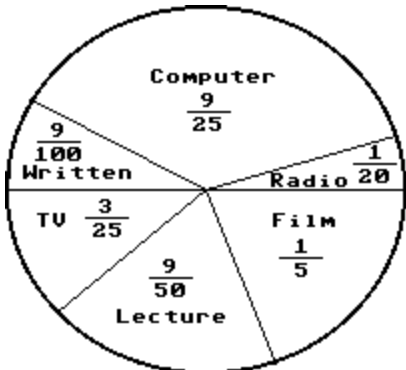
4) $\dfrac{75}{85}$

Perform the operation. Write the answer as a fraction in lowest terms.

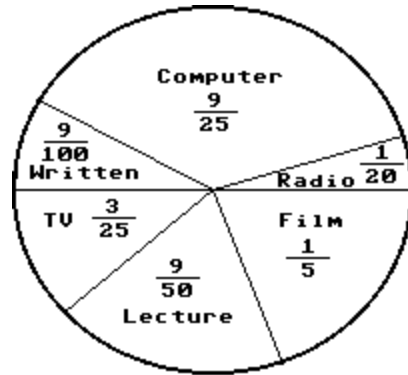5) $1\dfrac{2}{3} \div 1\dfrac{1}{3}$

6) $5 \div 6\dfrac{2}{11}$

Solve the problem.

7)

In a school survey, students showed these preferences for instructional materials. About how many students would you expect to prefer computers in a school of 750 students?

8)

In a school survey, students showed these preferences for instructional materials. About how many students would you expect to prefer lectures in a school of 900 students?

9) A football team gained 20 yards on one play, lost 10 yards on another, and gained 10 yards on the last play of the first half. They had already gained 370 yards during the half. What was the total yardage gain for the first half?

10) Your bank account has $100 in it when you write checks for $28, $35, and $46. You then deposit $15 and $43. How much is in the account? Are you overdrawn?

11) During one year 32 new employees began work at Daniel's Manufacturing Company and 29 employees left. At the beginning of the year there were 239 employees. What was the number of employees at the end of the year?

Find the value of the expression.

12) $\dfrac{5(2 + 1) - 7(1 + 1)}{5(4 - 2) - 1^3}$

13) $\dfrac{-18(-4) - (-6)(-4)}{-6(2) - 2(-2)}$

Write the statement in words and decide whether it is true or false.

14) $10 > 2 + 7$

15) $7 \le 3 + 5$

Decide if the given number is a solution to the given equation.

16) $\dfrac{x + 2}{10 - x} = \dfrac{7}{5}; \; 5$

17) $\dfrac{x + 3}{x - 4} = \dfrac{6}{7}; \; -45$

List the numbers from the set that are of the type indicated.

18) $B = \{20, \sqrt{7}, -7, 0, .75\}$
    Rational numbers

19) $\{0, \sqrt{5}, -9, \dfrac{4}{7}, -1\dfrac{3}{4}, 8.1, 3\}$

    Integers

20) $\{\sqrt{6}, -19, 0, \dfrac{7}{8}, -1\dfrac{1}{7}, 1.2, 2\}$

    Natural numbers

21) $\{13, \sqrt{7}, -10, 0\}$
    Real numbers

Select the smaller of the two given numbers.

22) $-|-2|, \; -|-19|$

23) $3, \; |-7|$

Find the difference.

24) $-\dfrac{5}{7} - \left(-\dfrac{5}{14}\right)$

25) $\dfrac{6}{7} - \left(\dfrac{4}{11} - \dfrac{3}{7}\right)$

Find the product.

26) $-\dfrac{7}{16}\left(-\dfrac{24}{7}\right)$

27) $-\dfrac{5}{4}\left(-\dfrac{6}{25}\right)$

Find the quotient.

28) $\dfrac{-3}{0}$

29) $\dfrac{0}{-4}$

Evaluate the expression, given x = -2, y = 3, and a = -4.

30) $8y - 4a^2$

31) $(-6a)(-9x - 8y)$

Write a numerical expression for the phrase and simplify it.

32) Twice the product of -5 and -4, subtracted from 6

33) 9 less than a number is -8.

Write the phrase as a mathematical expression. Use x to represent the number. Combine like terms if possible.

34) Eight times a number added to -5, subtracted from twice the sum of nine times the number and 7.

Write a numerical expression for the phrase and simplify it.

35) The product of 5 and the difference between 4 and -8

Answer the question.

49) $14a^6$, $14a^6$

36) Assume a is positive, b is negative, and c is positive for the expression
$a \cdot b^5 \cdot c$
Tell whether the value of the given expression is positive, negative or cannot be determined.

37) The only real number that does not have a reciprocal is _____.

38) Assume a is positive, b is negative, and c is positive for the expression
$a + (b \cdot c)$
Tell whether the value of the given expression is positive, negative or cannot be determined.

39) What is the reciprocal of $\frac{8}{3}$?

Decide whether the statement is an example of the commutative, associative, identity, inverse, or distributive property.

40) $2(x + 3) = 2x + 2 \cdot 3$

41) $7 \cdot 1 = 7$

42) $(3 + 5) + 4 = (5 + 3) + 4$

43) $6 + (-6) = 0$

44) $(7 \cdot 1) \cdot 5 = 7 \cdot (1 \cdot 5)$

Simplify the expression.

45) $-12 - (6 - 11q)$

46) $2p^2 + 6p^3 - 9p^2 - 8p^3$

47) $[-20.6 + (17.8 - 3.2)] - 2.1$

Identify the group of terms as like or unlike.

48) $7a^4$, $7a^5$

1) 39
2) -24
3) $\dfrac{7}{15}$
4) $\dfrac{15}{17}$
5) $\dfrac{5}{4}$
6) $\dfrac{55}{68}$
7) About 270 students
8) About 162 students
9) 390 yards
10) $49, no
11) 242 employees
12) $\dfrac{1}{9}$
13) -6
14) Ten is greater than two plus seven. True
15) Seven is less than or equal to three plus five. True
16) Yes
17) Yes
18) 20, -7, 0, .75
19) 0, -9, 3
20) 2
21) 13, $\sqrt{7}$, -10, 0
22) -|-19|
23) 3
24) $-\dfrac{5}{14}$
25) $\dfrac{71}{77}$
26) $\dfrac{3}{2}$
27) $\dfrac{3}{10}$
28) Undefined
29) 0
30) -40

31) - 144
32) 6 - 2(-5 • -4); -34
33) x - 9 = -8; 1
34) 2(9x + 7) - (-5 + 8x); 19 + 10x
35) 5[4 - (-8)]; 60
36) Negative
37) zero
38) Cannot be determined
39) $\dfrac{3}{8}$
40) Distributive
41) Identity
42) Commutative
43) Inverse
44) Associative
45) -18 + 11q
46) $-7p^2 - 2p^3$
47) -8.1
48) Unlike
49) Like