

MIAMI DADE COLLEGE  
INTERAMERICAN CAMPUS  
DEPARTMENT OF MATHEMATICS  
MAT 0024  
STUDY GUIDE

THE REAL NUMBER SYSTEM

MULTIPLE CHOICE. Choose the one alternative that best completes the statement or answers the question.

Write the number as the product of prime factors.

1) 90

A)  $2 \cdot 2 \cdot 3 \cdot 3 \cdot 5$

B)  $2 \cdot 3 \cdot 5$

C)  $10 \cdot 3 \cdot 3$

D)  $2 \cdot 3 \cdot 3 \cdot 5$

Write the fraction in lowest terms.

2)  $\frac{21}{45}$

A)  $\frac{11}{5}$

B)  $\frac{7}{15}$

C)  $\frac{15}{7}$

D)  $\frac{21}{45}$

3)  $\frac{200}{250}$

A)  $\frac{249}{199}$

B)  $\frac{4}{5}$

C)  $\frac{201}{251}$

D)  $\frac{5}{4}$

Find the product and write it in lowest terms.

4)  $\frac{3}{4} \cdot \frac{17}{21}$

A)  $\frac{1}{28}$

B)  $\frac{23}{29}$

C)  $\frac{17}{28}$

D)  $\frac{68}{63}$

Find the quotient and write it in lowest terms.

5)  $\frac{3}{7} \div 1\frac{2}{3}$

A)  $\frac{5}{7}$

B)  $\frac{3}{140}$

C)  $\frac{9}{35}$

D) 1

Find the sum and write it in lowest terms.

6)  $\frac{13}{10} + \frac{5}{8} + \frac{1}{5}$

A)  $2\frac{1}{8}$

B)  $\frac{53}{70}$

C)  $\frac{53}{8000}$

D)  $242\frac{6}{7}$

Find the difference and write it in lowest terms.

7)  $9\frac{1}{3} - 3\frac{1}{4}$

A)  $\frac{12}{73}$

B)  $1\frac{1}{4}$

C)  $6\frac{1}{12}$

D)  $24\frac{1}{3}$

Find the value of the expression.

8)  $\frac{3(7 - 4) + 3 \cdot 4}{3(5 - 3)}$

A)  $\frac{5}{2}$

B)  $\frac{1}{2}$

C)  $\frac{5}{4}$

D)  $\frac{7}{2}$

Evaluate the expression for the given values. If necessary, round to the nearest tenth.

9)  $(x + 2y)^2$   $x = 3, y = 4$

A) 121

B) 25

C) 22

D) 11

State the phrase as a mathematical expression. Use  $x$  to represent the variable.

10) The difference between two times a number and four

A)  $2 - x + 4$

B)  $2x - 4$

C)  $4 - 2x$

D)  $4 + 2x$

11) The product of eight and six more than a number

A)  $8(x + 6)$

B)  $(8 + 6)x$

C)  $8 \cdot 6 + x$

D)  $8 + 6 \cdot x$

Select the smaller of the two given numbers.

12)  $|-4|, |-22|$

A)  $|-22|$

B)  $|-4|$

Find the sum.

13)  $1 + [(-7) + (-12)]$

A) -18

B) 6

C) 20

D) -4

14)  $[2 + (-3)] + [22 + (-7)]$

A) 34

B) -30

C) -16

D) 14

Find the difference.

15)  $\left(-\frac{5}{9} + \frac{1}{7}\right) - \left(\frac{3}{5} - \frac{2}{3}\right)$

A)  $-\frac{1}{15}$

B)  $-\frac{26}{2835}$

C)  $-\frac{109}{315}$

D)  $-\frac{26}{63}$

16)  $(1 - 9) - [(-17) - (-13)]$

A) -38

B) -4

C) 12

D) 14

Perform the indicated operations.

17)  $5(-8) + |6 - 13|$

A) -47

B) -33

C) 47

D) 33

18)  $\frac{(-2)[6 - (-7)] + (-2)(6)}{(-2)(7 - 4)}$

A) 0

B)  $\frac{19}{3}$

C) 2

D)  $\frac{21}{5}$

Simplify the expression by combining like terms.

19)  $3p^2 + 7p^3 - 9p^2 - 3p^3$

A)  $10p^2 - 12p^3$

B)  $-2p^2p^3$

C)  $-2p^2$

D)  $-6p^2 + 4p^3$

Convert the phrase into a mathematical expression. Use  $x$  as the variable. Combine like terms when possible.

20) 8 times the sum of 10 times a number and 7

A)  $8(10x + 7); 80x + 56$

B)  $8(x + 7); 8x + 56$

C)  $8 + 10x + 7; 10x + 15$

D)  $8(10(x + 7)); 80x + 560$