

Review : Arithmetic

MGF 1107, Miami Dade College Kendall Campus

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

Use divisions to convert the base ten numeral to a numeral in the given base.

1) 83 to base five

A) 313_{five}

B) 133_{five}

C) 413_{five}

D) 410_{five}

1) _____

Convert the numeral to a numeral in base ten.

2) 14_{five}

A) 9

B) 45

C) 70

D) 25

2) _____

Use divisions to convert the base ten numeral to a numeral in the given base.

3) 359 to base two

A) 101011111_{two}

B) 101100101_{two}

C) 101101011_{two}

D) 101100111_{two}

3) _____

Convert the numeral to a numeral in base ten.

4) 45_{eight}

A) 72

B) 296

C) 37

D) 53

4) _____

5) 22_{five}

A) 60

B) 110

C) 12

D) 20

5) _____

6) 1101_{two}

A) 12

B) 6

C) 13

D) 22

6) _____

7) 231_{four}

A) 21

B) 45

C) 24

D) 6

7) _____

Determine if the number is divisible by 2, 3, 4, 5, 6, 8, 9, 10, and/or 12.

8) 5112

A) 2, 3, 4, 8

B) 2, 3, 4

C) 2, 3, 6, 8

D) 2, 3, 4, 6, 8, 9, 12

8) _____

9) 135,013

A) None

B) 3, 5

C) 3

D) 3, 7

9) _____

10) 4814

A) 2, 3, 4

B) 2

C) 3, 4

D) 4

10) _____

Determine if the statement is true or false.

11) 868080 is divisible by 4:

A) True

B) False

11) _____

12) 779041 is divisible by 3:

A) True

B) False

12) _____

Use the order of operations to find the value of the expression.

13) $3 + 2 \cdot 9$ A) 33 B) 21 C) 45 D) 29 13) _____

14) $-1 \cdot 2 + (-5) \cdot 2$ A) -12 B) -7 C) 3 D) -11 14) _____

15) $-5(-8) - 6(-8)$ A) -8 B) 8 C) -272 D) 88 15) _____

16) $2 - 4(-7) - 4$ A) 10 B) 26 C) 22 D) 28 16) _____

17) $4 - 5(-9 + 5)$ A) 4 B) 24 C) 74 D) 54 17) _____

18) $(5 - 7)(-2 - 6)$ A) 19 B) 37 C) 16 D) -8 18) _____

Reduce the rational number to its lowest terms.

19) $\frac{40}{45}$ A) $\frac{40}{45}$ B) $\frac{8}{5}$ C) $\frac{8}{9}$ D) $\frac{5}{9}$ 19) _____

20) $\frac{30}{70}$ A) $\frac{3}{7}$ B) $\frac{10}{7}$ C) $\frac{30}{70}$ D) $\frac{3}{10}$ 20) _____

Perform the indicated operation(s). Where possible, reduce the answer to lowest terms.

21) $\frac{1}{5} + \frac{3}{5}$ A) 0 B) $\frac{2}{5}$ C) $\frac{4}{5}$ D) $\frac{4}{25}$ 21) _____

22) $\frac{4}{5} + \frac{8}{13}$ A) $\frac{2}{3}$ B) $\frac{12}{65}$ C) $\frac{1}{6}$ D) $\frac{92}{65}$ 22) _____

23) $\frac{7}{11} - \frac{1}{11}$ A) $\frac{6}{11}$ B) $\frac{8}{11}$ C) 0 D) $-\frac{7}{11}$ 23) _____

24) $\frac{4}{13} - \left(-\frac{1}{13}\right)$ 24) _____
 A) $\frac{1}{13}$ B) $\frac{5}{13}$ C) $\frac{3}{13}$ D) $-\frac{5}{13}$

Find the rational number halfway between the two numbers in each pair.

25) $\frac{1}{4}$ and $\frac{1}{6}$ 25) _____
 A) $\frac{5}{24}$ B) $\frac{1}{24}$ C) $\frac{5}{12}$ D) $\frac{1}{12}$

Provide an appropriate response.

- 26) Which of the following decimal numbers is an irrational number? Explain your answer. 26) _____
 A) 0.0089372432 is irrational because it extends past the millionths place.
 B) $1.\overline{16}$ is irrational because it does not terminate.
 C) $0.\overline{53}$ is irrational because it is a repeating decimal.
 D) 1.414213562373095... is irrational because it neither terminates nor repeats.

Use a calculator with a square root key to find a decimal approximation for the square root. Round the number displayed as indicated.

27) $\sqrt{582}$ to the nearest thousandth 27) _____
 A) 582.000 B) 24.125 C) 24.122 D) 24.130

28) $\sqrt{1131}$ to the nearest hundredth 28) _____
 A) 33.63 B) 33.6 C) 34 D) 33.630

Simplify the square root.

29) $\sqrt{175}$ 29) _____
 A) $25\sqrt{7}$ B) 13.229
 C) $5\sqrt{7}$ D) This expression is already simplified.

30) $\sqrt{72}$ 30) _____
 A) $2\sqrt{23}$ B) $6\sqrt{2}$
 C) $3\sqrt{8}$ D) This expression is already simplified.

Use properties of exponents to simplify the expression. First, express the answer in exponential form. Then, evaluate the expression.

31) $3^2 \cdot 3^7$ 31) _____
 A) 3^{14} ; 4,782,969 B) 3^9 ; 19,683 C) 3^9 ; 2196 D) $9 \cdot 3$; 27

32) $4 \cdot 4^2$ 32) _____
 A) 4^2 ; 16 B) 4^3 ; 64 C) 4; 4 D) 12; 12

Use the zero and negative exponent rules to simplify the expression.

33) $(-11)^0$ 33) _____
 A) -11 B) 1 C) 0 D) -1

- 34) 4^{-5} 34) _____
 A) 1024 B) -1024 C) $\frac{1}{20}$ D) $\frac{1}{1024}$

Use properties of exponents to simplify the expression. Express answer in exponential form.

- 35) $3^3 \cdot 3^{-5}$ 35) _____
 A) -3^8 B) 3^{-15} C) -3^{-2} D) 3^{-2}

- 36) $5^{-3} \cdot 5$ 36) _____
 A) -5^2 B) 5^{-3} C) 5^{-2} D) $-3 \cdot 5^2$

Express the number in decimal notation.

- 37) 1.01×10^4 37) _____
 A) 40.4 B) 1010 C) 10,100 D) 101,000

- 38) 8.88×10^{-4} 38) _____
 A) 0.000888 B) 0.0000888 C) 0.00888 D) -888,000

- 39) 3.532×10^{-5} 39) _____
 A) -353,200 B) 0.00003532 C) 0.000003532 D) 0.0003532

- 40) 7×10^5 40) _____
 A) 350 B) 700,000 C) 7000 D) 0.00007

- 41) 7.1×10^{-1} 41) _____
 A) 0.071 B) -7.1 C) 0.0071 D) 0.71

Express the number in scientific notation.

- 42) 630,000 42) _____
 A) 6.3×10^5 B) 6.3×10^{-5} C) 6.3×10^{-4} D) 6.3×10^4

- 43) 0.000792 43) _____
 A) 7.92×10^4 B) 7.92×10^{-3} C) 7.92×10^{-4} D) 7.92×10^{-5}

- 44) 0.000002731 44) _____
 A) 2.731×10^{-6} B) 2.731×10^{-7} C) 2.731×10^{-5} D) $2.731 \cdot 10^6$

- 45) 0.00000026703 45) _____
 A) 2.6703×10^{-7} B) 2.6703×10^6 C) 2.6703×10^{-6} D) 2.6703×10^7

Perform the indicated operation and express the answer in decimal notation.

- 46) $(6 \times 10^3) \times (3 \times 10^2)$ 46) _____
 A) 180,000 B) 1,800,000 C) 18,000,000 D) 180,000,000