

NAME: _____

SHOW YOUR WORK TO OBTAIN CREDIT NO WORK = NO CREDIT

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

Find the prime factorization of the composite number.

1) 11,500

A) $5^4 \times 23$

B) $2^3 \times 5^2 \times 23$

C) $2^4 \times 23$

D) $2^2 \times 5^3 \times 23$

1) _____

Solve the problem.

2) A museum curator collects fossils from two different periods. He has 800 from one period and 408 from a later period. He plans to arrange the fossils in display cases so that each case contains the same number of fossils. Also, each case must contain fossils from only one period. What is the largest number of fossils that can be placed in each case?

A) 800

B) 8

C) 408

D) 40,800

2) _____

Find the least common multiple of the numbers.

3) 210 and 360

A) 10,800

B) 75,600

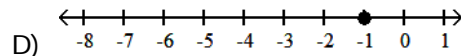
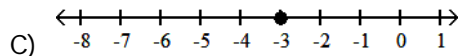
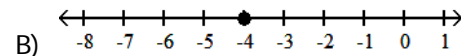
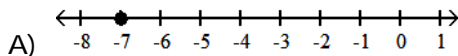
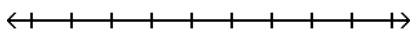
C) 6300

D) 2520

3) _____

Graph the integer on the number line.

4) -7



4) _____

Insert < or > in the area between the integers to make the statement true.

5) -400 0

A) $-400 > 0$

B) $-400 < 0$

5) _____

Find the absolute value.

6) $|-10|$

A) 20

B) 0

C) 10

D) -10

6) _____

Perform the indicated operation.

7) $-37 + (-21)$

A) -16

B) -58

C) 58

D) 16

7) _____

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

8) $4 - 2(-6 + 5)$

A) 21

B) 26

C) 6

D) -2

8) _____

Express the repeating decimal as a quotient of integers. If possible, reduce to lowest terms.

9) $0.\overline{6}$

A) $\frac{2}{3}$

B) $\frac{3}{50}$

C) $\frac{2}{33}$

D) $\frac{3}{5}$

9) _____

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

10) $\left(-\frac{1}{6}\right)\left(\frac{5}{7}\right)$

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

B) $-\frac{7}{30}$

C) $\frac{5}{42}$

D) $-\frac{5}{42}$

10) _____

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

11) $\frac{1}{4}$ and $\frac{1}{6}$

A) $\frac{5}{12}$

B) $\frac{1}{12}$

C) $\frac{5}{24}$

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

11) _____

Solve the problem.

12) A recipe calls for $\frac{3}{16}$ cup of butter. How much is needed to double the recipe?

A) $\frac{3}{32}$ c

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

C) $\frac{1}{8}$ c

D) $\frac{3}{8}$ c

12) _____

List all numbers from the set that are natural numbers.

13) $\{-5, -\frac{1}{5}, 0, 0.14, \sqrt{15}, 9.8, \sqrt{25}\}$

13) _____

A) $\{0, \sqrt{25}\}$

B) $\{\sqrt{25}\}$

C) $\{-5, -\frac{1}{5}, 0, 0.14, 9.8, \sqrt{25}\}$

D) $\{-5, \sqrt{25}\}$

Use the distributive property to simplify the radical expressions.

14) $\sqrt{3}(2 + \sqrt{3})$

14) _____

A) $2\sqrt{3} + 3$

B) 6

C) 5

D) $3\sqrt{3}$

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

15) $(8^2)^3$

15) _____

A) $24^2; 192$

B) $8^5; 32,768$

C) $16^3; 1024$

D) $8^6; 262,144$

Express the number in decimal notation.

16) 6.801×10^{-5}

16) _____

A) -680,100

B) 0.0006801

C) 0.00006801

D) 0.000006801

Express the number in scientific notation.

17) 0.00000077207

17) _____

A) 7.7207×10^{-6}

B) 7.7207×10^7

C) 7.7207×10^{-7}

D) 7.7207×10^6

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

18) $\frac{7.5 \times 10^{-7}}{5 \times 10^{-3}}$

18) _____

A) 0.00015

B) 15,000

C) 150,000,000,000

D) 0.0000000015

Write the first six terms of the arithmetic sequence with the first term, a_1 , and common difference, d .

19) $a_1 = 17; d = -5$

19) _____

A) 12, 7, 2, -3, -8, -13

B) 22, 17, 12, 7, 2, -3

C) 17, 12, 7, 2, -3, -8

D) 17, 12, 6, 2, -3, -8

Find the indicated term for the arithmetic sequence with first term, a_1 , and common difference, d .

20) Find a_8 , when $a_1 = -6, d = -3$.

20) _____

A) 15

B) 18

C) -30

D) -27

Write the first six terms of the geometric sequence with first term, a_1 , and common ratio, r .

21) $a_1 = 8; r = 3$

21) _____

A) 8, 24, 72, 216, 648, 1944

B) 3, 24, 192, 1536, 12,288, 98,304

C) 8, 11, 14, 17, 20, 23

D) 24, 72, 216, 648, 1944, 5832

Find the indicated term for the geometric sequence with first term, a_1 , and common ratio, r .

22) Find a_6 , when $a_1 = 17, r = \frac{1}{2}$.

22) _____

A) $\frac{17}{64}$

B) $\frac{17}{32}$

C) $\frac{39}{2}$

D) 20

Determine whether the sequence is arithmetic or geometric. Then find the next two terms.

23) 1, 3, 9, 27, ...

23) _____

A) Geometric; -81, 243

B) Arithmetic; 81, 243

C) Geometric; 9, 3

D) Geometric; 81, 243

Use the formula for the n th term of a geometric sequence to solve the problem.

24) You are offered a job that pays \$27,000 for the first year with an annual increase of 6% per year beginning in the second year. That is, beginning in year 2, your salary will be 1.06 times what it was in the previous year. What can you expect to earn in your seventh year on the job? Round answer to the nearest dollar.

24) _____

A) \$40,598

B) \$38,300

C) \$36,132

D) \$43,034

Find the indicated term for the geometric sequence with first term, a_1 , and common ratio, r .

25) Find a_6 , when $a_1 = 8, r = 3$.

25) _____

A) 120

B) 5832

C) 1944

D) 243