1

Which of the following expressions is equivalent to $\frac{2}{3}(a^2-a-3)+\frac{1}{3}(a^2+2a+6)$?

A) a^2

B) a^2+a

C) a^2-a

D) a^2-1

2

Which of the following expressions is equivalent to $5.4(x-2y)-2.7(x-3y)$?

A) $2.7(x+y)$

B) $2.7(x-y)$

C) $2.7x+3.6y$

D) $2.7x-3.6y$

3

Which of the following expressions is equivalent to $\frac{1}{2}(2a+3b+4c)-\frac{3}{2}(b+2c)$?

A) $a-3c$

B) $a+5c$

C) $a+c$

D) $a-c$

4

Which of the following expressions is equivalent to $a(b-c)-b(a+c)-c(a-b)$?

A) bc

B) $2ac$

C) $-2bc$

D) $-2ac$

5

Which of the following expressions is NOT equivalent to $3[6a-3(1-a)-5(a+1)]$?

A) $12a-24$

B) $24(a-\frac{1}{2})$

C) $12(a-2)$

D) $24(\frac{1}{2}a-1)$

6

Which of the following expressions is NOT equivalent to $p-\frac{2}{3}(2p-3q)-\frac{1}{3}(p+4q)$?

A) $-\frac{2}{3}(p-q)$

B) $-\frac{2}{3}p+\frac{2}{3}q$

C) $-\frac{2}{3}(p+q)$

D) $-\frac{1}{3}(2p-2q)$

7

Twice the product of m and n decreased by the square of the sum of m and n.

Which of the following is an expression for the statement above?

A) $2mn - (m^2 + n^2)$

B) $2mn - (m+n)^2$

C) $(m+n)^2 - 2mn$

D) $(m^2 + n^2) - 2mn$

8

The product of a number x and four decreased by twelve.

Which of the following is an expression for the statement above?

A) $4x + 12$

B) $4(x+12)$

C) $4(x-12)$

D) $4x - 12$

9

The quotient of 19 and a number d increased by seven.

Which of the following is an expression for the statement above?

A) $\dfrac{19}{d} + 7$

B) $\dfrac{d}{19} + 7$

C) $\dfrac{19+d}{7}$

D) $\dfrac{d+7}{19}$

10

Mario received y text messages each minute for 10 minutes yesterday and received t text messages each minute for 20 minutes today. What is the total number of text messages he received for two days in terms of y and t?

A) $30yt$

B) $200yt$

C) $20y + 10t$

D) $10y + 20t$

11

Which of the following expressions represents the product of $3k$ and the sum of m and one third of n?

A) $3km + \dfrac{1}{3}n$

B) $3k \cdot \dfrac{1}{3}(m+n)$

C) $3k(m + \dfrac{1}{3}n)$

D) $3k(m + n + \dfrac{1}{3})$

12

The difference between two numbers is eight. If the smaller number is n to the third power what is the greater number?

A) $n^3 - 8$

B) $n^3 + 8$

C) $8 - n^3$

D) $8n^3$

13

Which of the following shows the numbers arranged in increasing order?

A) $-\sqrt{3}$, -5, $\frac{2}{3}$, 4, $\sqrt{10}$

B) $-\sqrt{3}$, -5, $\frac{2}{3}$, $\sqrt{10}$, 4

C) -5, $-\sqrt{3}$, $\frac{2}{3}$, $\sqrt{10}$, 4

D) $\frac{2}{3}$, $-\sqrt{3}$, $\sqrt{10}$, 4, -5

14

$11-2(2-0.8^2)+24\div(-4) =$

A) 1.68

B) 2.28

C) 2.78

D) 3.18

15

To the nearest cents, what is the value of $\$500(1+0.045)^8 - \$500(1+0.04)^8$?

A) $25.45

B) $26.00

C) $26.77

D) $28.25

16

Which of the following is an irrational number?

A) -1.2

B) $\frac{4}{3}$

C) $-\sqrt{16}$

D) $-\sqrt{10}$

17

Which of the following is a rational number?

A) $\sqrt{1.6}$

B) $\sqrt{\frac{49}{64}}$

C) $\sqrt{0.9}$

D) $-\sqrt{250}$

18

Two less than the quotient of three and a number n

Which of the following is an expression for the statement above?

A) $2 - \dfrac{n}{3}$

B) $\dfrac{n}{3} - 2$

C) $\dfrac{3}{n} - 2$

D) $2 - \dfrac{3}{n}$

19

How much greater than $n - 11$ is $n + 3$?

A) 8

B) 10

C) 12

D) 14

20

Johnny received m text messages on Friday, three less than twice as many text messages on Saturday than on Friday, and five more text messages on Sunday than on Saturday. What is the total number of text messages he received over the three days?

A) $4m + 2$

B) $5m - 1$

C) $4m - 2$

D) $5m + 1$

21

What number is halfway between $-\dfrac{5}{6}$ and $\dfrac{1}{3}$ on a number line?

A) $-\dfrac{1}{4}$

B) $-\dfrac{1}{3}$

C) $-\dfrac{1}{2}$

D) $-\dfrac{5}{12}$

22

What is 4.4985 rounded to the nearest hundredth?

A) 4.49

B) 4.498

C) 4.499

D) 4.50

23

Which of the following expressions is equivalent to $3a + \dfrac{1}{2}(b - 2c) - \dfrac{1}{2}(2a + 3b)$?

A) $\dfrac{3}{2}a - \dfrac{1}{2}b - c$

B) $\dfrac{3}{2}a + b - c$

C) $2a - b - c$

D) $2a + b - c$

24

How many minutes are there in $2h$ hours and $6m$ minutes?

A) $60h+12m$

B) $120h+6m$

C) $60h+6m$

D) $120h+60m$

26

Which of the following expressions is equivalent to $(2y-x)-2(y-2z)-4(x+z)$?

A) $-3x$

B) $-5x$

C) $-3x+8z$

D) $-5x-8z$

25

1. Add 5 to a number n.
2. Divide by 8.
3. Subtract by 1.
4. Multiply by 8.

When the sequence of operations above has been completed in order, which of the following is an expression for the statement above?

A) $n-1$

B) $n-2$

C) $n-3$

D) $n-4$