1)   Which of the following statements would **not** describe the number $\frac{11}{40}$?

     A $\frac{11}{40}$ is a rational number.

     B $\frac{11}{40}$ is equivalent to 0.275.

     C $\frac{11}{40}$ is a real number.

     D $\frac{11}{40}$ is a repeating decimal.

     E $\frac{11}{40}$ has a reciprocal of $\frac{40}{11}$.

2)   Evaluate the following, if $x = -2$ and $y = 3$.

$$x^2 + xy - (x + y)$$

     A -3

     B -11

     C -1

     D 1

     E   None of the above.

3)   Find the value of : $-\dfrac{9}{20}\left(\dfrac{5}{8} - \dfrac{5}{6}\right)$

     A $\frac{21}{32}$

     B $-\frac{21}{32}$

     C $\frac{3}{32}$

     D 0

     E $-\frac{3}{32}$

4)   Which of the following is(are) equal to 5?

> I. $|13-18|$
>
> II. $|13|-|18|$
>
> III. $\dfrac{-45}{-9}$
>
> IV. $-2-(-7)$

A   I, II, III, and IV

B   I, III, and IV only

C   I and III only

D   III and IV only

E   II, III, and IV only

5)   Which statement is **false**?

A $-3(2-x)=3x-6$

B $5-(2x+3)=2-2x$

C $3(a+2)-4(a-3)=-a-6$

D $4x-3y+2-5x+12y+7=-x+9y+9$

E $4r-2+3(3-4r)=7-8r$

6)   Solve this equation. $\frac{1}{2}(4x-5)=2x+11$

A $x=-\dfrac{22}{5}$

B   All real numbers

C $x=\dfrac{7}{2}$

D   No solution

E $x=0$

7)   A catalog discount warehouse sells all winter jackets at a markup of 75% above
      wholesale cost (over wholesale cost) **plus** a processing/shipping fee of $8.25. Robert
      orders a jacket and is billed $150. If w represents the wholesale cost of the jacket, which
      equation could be used to find w?

      A $w + 0.75w + 8.25 = 150$

      B $0.75w + 8.25 = 150$

      C $150 + 0.75w + 8.25 = w$

      D $w = 0.75(150) + 8.25$

      E $w + 0.75w = 150 + 8.25$

8)   The three angles in a triangle are represented below using the variable x. Find the
      measure of the angle with the **largest** measure?
      What is true about the measure?

      A   It is less than 70°.

      B   It is at least 70°, but less than 75°.

      C   It is at least 75°, but less than 80°.

      D   It is at least 80°, but less than 85°.

      E   It is at least 85°.

      (triangle with angles labeled x, $2x$, and $x + 20$)
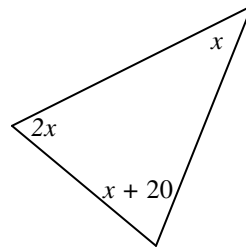
9)   Baseball analysts use the formula $r = 0.3b - 0.6c$ to estimate the number of runs r due to
      stolen bases for a runner who stole b bases and was caught stealing bases c times. Joseph
      Lei stole 12 bases and was caught stealing bases 2 times. Which describes how many
      runs he was credited according to this data? Round your answer to the nearest tenth of a
      run.

      A   Less than 1 run.

      B   At least 1 run, but less than 2 runs.

      C   At least 2 runs, but less than 3 runs.

      D   At least 3 runs, but less than 4 runs.

      E   At least 4 runs.

3

10) Simplify the exponential expression. Do not leave your answer with zero or negative exponents.

$$\frac{2m(m^3n)^{-2}}{m^{-3}n^2}$$

A $2m^{10}$

B $\dfrac{2}{m^8}$

C $\dfrac{2}{m^8n^4}$

D $\dfrac{2m^2}{n^4}$

E $\dfrac{2}{m^2n^4}$

11) Find the quotient below, using scientific notation. Write your answer in scientific notation to the correct number of significant digits.

$$\frac{45,000,000}{0.025}$$

A 5.6×10^4

B 1.8×10^5

C 0.18×10^9

D 5.6×10^9

E   None of the above.

12) Which of the following equation(s) is(are) paired with a correct solution that could be represented by an ordered pair (point) on a rectangular system graph?

I	$3x+2y=8,$	$(4,-2)$
II	$y=\lvert x\rvert+5,$	$(-2,3)$
III	$y=(x-1)^2,$	$(4,9)$

A   None of them.

B   I, II, and III

C   I and II only

D   I and III only

E   I only
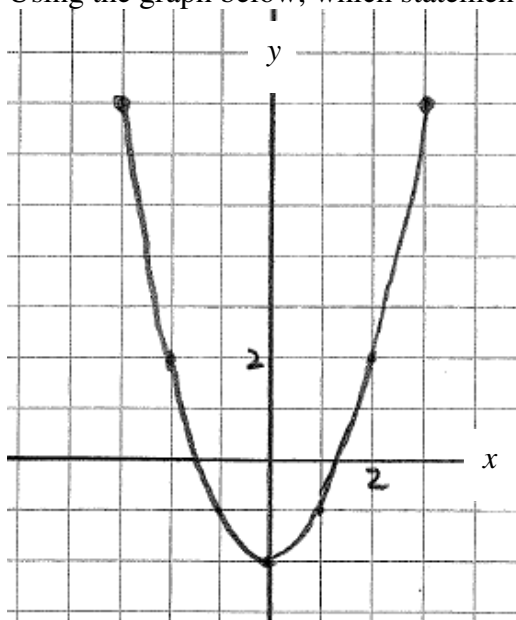
13)   If $f(x) = 3x + 2$, find $f(a+1)$.

    A $a + 3$
    B $3a + 3$
    C $a + 6$
    D $3a + 5$
    E $3a + 2$

14)   Evaluate: $2^{-1} + 3^0$

    A -1
    B $\frac{3}{2}$
    C 1
    D $\frac{7}{2}$
    E -2

15)   Using the graph below, which statement is **false**?

    A   The value of $f(-1)$ is -1.
    B   The domain of the function is $\{x \mid -3 \le x \le 3\}$.
    C   When $x = -2$, the value of the function is 0.
    D   The graph represents a function.
    E   The ordered pair $(-3, 7)$ is found on the graph.