LESSON 3-2 TUNE-UP EXERCISES

Multiple-Choice

1. If $\frac{m-n}{n}=\frac{4}{9}$, what is the value of $\frac{n}{m}$?

   (A) $\frac{9}{13}$

   (B) $\frac{7}{4}$

   (C) $\frac{9}{5}$

   (D) $\frac{13}{7}$

2. If $\frac{p+4}{p-4}=13$, what is the value of p?

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

   (B) $\frac{10}{13}$

   (C) $\frac{28}{9}$

   (D) $\frac{14}{3}$

3. If $4x + 7 = 12$, what is the value of $8x + 3$?

   (A) 9
   (B) 11
   (C) 13
   (D) 15

4. $\frac{6}{x}=\frac{4}{x-9}$, what is the value of $\frac{x}{18}$?

   (A) 3
   (B) 2
   (C) $\frac{1}{2}$
   (D) $\frac{3}{2}$

5. If $3j - (k + 5) = 16 - 4k$, what is the value of $j + k$?

   (A) 8
   (B) 7
   (C) 5
   (D) 4

6. If $\frac{1}{2}(10p + 2) = p + 7$, then $4p =$

   (A) 6
   (B) $\frac{5}{2}$
   (C) 4
   (D) 3

7. If $0.25y + 0.36 = 0.33y - 1.48$, what is the value of $\frac{y}{10}$?

   (A) 2.30
   (B) 1.40
   (D) 0.75
   (C) 0.64

8. If $\frac{4}{7}k = 36$, then $\frac{3}{7}k =$

   (A) 21
   (B) 27
   (C) 32
   (D) 35

9. If $\frac{1}{2}x+\frac{1}{4}x+\frac{1}{8}x = 14$, then $x =$

   (A) 4
   (B) 8
   (C) 12
   (D) 16

10. If $\frac{2}{x} = 2$, then $x + 2 =$

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

(B) $\frac{5}{2}$

(C) 3

(D) 4

11. If $\frac{y-2}{2} = y + 2$, then $y =$

(A) -6

(B) -4

(C) -2

(D) 4

12. If $\frac{2y}{7} = \frac{y+3}{4}$, then $y =$

(A) 5

(B) 9

(C) 13

(D) 21

13. If $\frac{y}{3} = 4$, then $3y =$

(A) 4

(B) 12

(C) 24

(D) 36

14. When the number k is multiplied by 5, the result is the same as when 5 is added to k. What is the value of k?

(A) $\frac{4}{5}$

(B) 1

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

(D) $\frac{3}{2}$

$$\frac{8r+7}{4s} = 11$$

15. If $\frac{1}{2}r + 1 = s + 1$, what is the value of $r + s$ for the equation above?

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

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

(C) 1

(D) $\frac{3}{2}$

16. If $m + 1 = \frac{5(m-1)}{3}$, then $\frac{1}{m} =$

(A) $\frac{1}{4}$

(B) $\frac{3}{8}$

(C) 2

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

$$\frac{5(p-1)+6}{8} = \frac{7-(3-2p)}{12}$$

17. In the equation above, what is the value of p?

(A) $\frac{1}{3}$

(B) $\frac{5}{11}$

(C) $\frac{2}{3}$

(D) $\frac{9}{11}$

18. During the investigation of an archeological dig, a femur bone was found and used to estimate the height of the person it came from using the formula $h = 61.4 + 2.3F$, where h is the height, in *centimeters*, of a person whose femur is F *centimeters* in length. Using this formula, the height of the person was estimated to be 5 feet 8 inches. The length of the femur, in centimeters, was closest to which of the following lengths? [Note: 1 inch = 2.54 centimeters]

(A) 37.3
(B) 48.4
(C) 51.0
(D) 56.3

19. Last month, Sara, Ryan, and Taylor received a total of 882 emails. If Sara received 25% more emails than the sum of the number of emails received by Ryan and Taylor, how many emails did Sara receive?

(A) 448
(B) 486
(C) 490
(D) 504

20. In an election for senior class president, Emily received approximately 25% more votes than Alexis. If Emily received 163 votes, the number of votes Alexis received is closest to

(A) 122
(B) 130
(C) 138
(D) 204

21. At City High School, the sophomore class has 60 more students than the freshman class. The junior class has 50 fewer students than twice the students in the freshman class. The senior class is three times as large as the freshman class. If there are a total of 1,424 students at City High School, how many students are in the freshman class?

(A) 202
(B) 205
(C) 235
(D) 236

Grid-In

1. If $2w - 1 = 2$, what is the value of w^2 1?

2. If $11 - 3x$ is 4 less than 13, what is the value of $6x$?

3. If $2x + 1 = 8$ and $15 - 3y = 0$, what is value of $\frac{x}{y}$?

4. The total score in a football game was 72 points. The winning team scored 12 points more than the losing team. How many points did the winning team score?

5. Max's cell phone plan charges a monthly "pay-as-you-go rate" of $0.13 for each text message sent or received. If Max was charged $7.41 for 15 more sent texts than he received, how many texts did Max send?

6. If $\frac{7}{12}x - \frac{1}{3}x = \frac{1}{2} + \frac{3}{8}$, what is the value of x?

$$\frac{5(y-2)}{y} - \frac{1}{3} = 0$$

7. In the equation above, what is the value of y?

$$D = 141 - 0.16p$$
$$S - 64 + 0.28p$$

8. The set of equations above describes how the supply, S, and demand, D, for a computer memory chip depends on market price. If p represents the price in dollars for each lot of 10 memory chips, for what dollar price per memory chip does supply equal demand?

9. If $\frac{7(x+9)}{4} - 1 = 41$, what is the value of $x - 9$?

10. Gerald and Jim work at a furniture store. Gerald is paid \$185 per week plus 4% of his total sales. Jim is paid \$275 per week plus 2.5% of his total sales. What amount of sales will make their weekly pay the same?

11. If 7 quarters and n nickels is equivalent to 380 pennies, what is the value of n?

12. A gardener is planting two types of trees:

    - Type A is three feet tall and grows at a rate of 15 inches per year.
    - Type B is five feet tall and grows at a rate of 9 inches per year.

    How many years will it take for these trees to grow to the same height?

$$\frac{9n-(5n-3)}{8} = \frac{2(n-1)-(3-7n)}{12}$$

13. In the equation above, what is the value of n?

14. An animal shelter spends \$2.35 per day to care for each cat and \$5.50 per day to care for each dog. If \$89.50 is spent caring for a total of 22 cats and dogs, how much was spent on caring for all of the cats?

$$r = 2.24 + 0.06x$$

$$p = 2.89 + 0.10x$$

15. In the equations above, r and p represent the price per gallon, in dollars, of regular and premium grades of gasoline, respectively, x months after January 1 of last year. What was the cost per gallon, in dollars, of premium gasoline for the month in which the per gallon price of premium exceeded the per gallon price of regular by \$0.93?