GRADE 7 # Mathematics Summer Learning

Choose the best answer.

For 1−2, use the data set.

Stem	Leaves
2	0 8 9 9
3	1 2 6
4	1 2

1. What is the mean of the data set?

   A 22
   C 31
   B 29
   D 32

2. How are the data displayed?

   F box-and-whisker plot
   G frequency table
   H stem-and-leaf plot
   I histogram

3. For which of the following would a line graph be the best way to show the data?

   A showing how you budget your money
   B showing how many people were in math class during the first five periods on the first day of school
   C showing the change in temperature over 6 hours
   D none of the above

4. Evaluate 16^2.

   F 8
   H 32
   G 18
   I 256

5. Which is 730,000 in scientific notation?

   A 73×10^4
   C 7.3×10^4
   B 7.3×10^5
   D 73×10^5

6. Evaluate $2 + 6[(4 + 4) \div 2]$.

   F 48
   H 32
   G 38
   I 26

7. Solve $5z = 105$.

   A $z = 21$
   C $z = 105$
   B $z = 100$
   D $z = 525$

8. Find the difference $-6 - (-3)$.

   F −9
   H 3
   G −3
   I 9

9. Solve $\dfrac{k}{-8} = -6$.

   A $k = -48$
   C $k = 2$
   B $k = -14$
   D $k = 48$

10. Convert $\dfrac{45}{20}$ to a decimal.

    F 2.25
    H 0.25
    G $2\dfrac{1}{4}$
    I 0.44

11. Find the product $-3.5 \cdot 1.4$.

    A −4.9
    C −0.49
    B 0.49
    D 4.9

12. Solve $7.2h = 57.6$.

    F $h = 0.8$
    H $h = 50.4$
    G $h = 8$
    I $h = 80$

13. Find the quotient $3\dfrac{6}{7} \div \dfrac{5}{21}$.

    A $\dfrac{5}{81}$
    C $1\dfrac{4}{45}$
    B $\dfrac{45}{49}$
    D $16\dfrac{1}{5}$

14. Solve $x - 6\dfrac{1}{2} = 3\dfrac{2}{3}$.
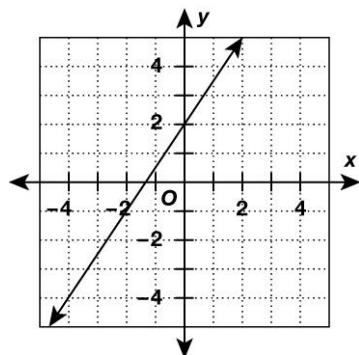
   F $x = 10\dfrac{1}{6}$ H $x = 9\dfrac{1}{6}$

   G $x = 9\dfrac{3}{5}$ I $x = 3\dfrac{1}{6}$

15. Write the equation of the line in slope-intercept form.

   A $y = \dfrac{3}{2}x - 2$ C $y = \dfrac{3}{2}x + 2$

   B $y = \dfrac{2}{3}x - 2$ D $y = \dfrac{2}{3}x + 2$

16. Solve the equation $-8x + 12 = 108$

   F $x = -96$ H $x = 12$

   G $x = -12$ I $x = 96$

17. Use cross products to solve the proportion $\dfrac{5}{m} = \dfrac{15}{9}$.

   A $m = 1$ C $m = 8\dfrac{1}{3}$

   B $m = 3$ D $m = 27$

18. Use a unit conversion factor to convert 90 yards per minute to yards per second.

   F 300 yd/s   H 15 yd/s

   G 60 yd/s   I 1.5 yd/s

19. A scale model of a building is 5 inches wide by 7 inches long. If the scale is 1 in.:15 ft, how long is the building?

   A 35 feet   C 105 feet

   B 75 feet   D 180 feet

20. What is 85% written as a fraction?

   F $\dfrac{17}{20}$ H 0.85

   G $1\dfrac{3}{17}$ I $\dfrac{85}{1}$

21. 72 is 18% of what number?

   A 400   C 25

   B 129.6   D 12.96

22. Find the percent of decrease if 110 is decreased to 88.

   F 125%   H 25%

   G 80%   I 20%

23. What is the simple interest rate if $p = \$4{,}000$, $t = 2$ years, and $I = \$320$?

   A 2%   C 8%

   B 4%   D 80%

24. What is the sum in simplest form?
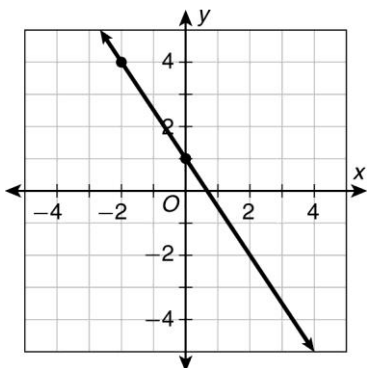
$$5\dfrac{3}{4} + 2\dfrac{1}{2}$$

   F $7\dfrac{4}{6}$ H $7\dfrac{5}{4}$

   G $7\dfrac{2}{3}$ I $8\dfrac{1}{4}$

**GRADE 7** **Mathematics Summer Learning**

25. Which function represents a proportional relationship?

    A $y = 3x$ C $y = 3x - 1$

    B $y = 2x - 1$ D $y = 4x^2$

26. The graph shows a constant rate of change. What is the slope of the line?

    F $-\dfrac{3}{2}$ H $\dfrac{2}{3}$

    G $-\dfrac{2}{3}$ I $\dfrac{3}{2}$

27. Luc wants to display the data below in a box-and-whisker plot. What are the lower and upper quartiles of the data?

    4, 9, 6, 13, 7, 19, 15, 9, 16, 12

    A 7, 15   C 4, 19

    B 9, 13   D 7, 18

28. Convert 4.5 meters to centimeters.

    F 450 cm   H 0.45 cm

    G 45 cm   I 0.045 cm

29. Find the area of a triangle with base 10 centimeters and height 8.5 centimeters.

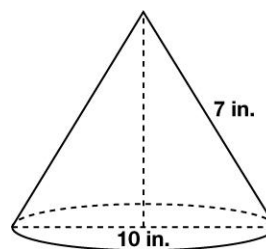   A 85 cm²   C 37 cm²

    B 42.5 cm²   D 18.5 cm²

30. What is the area of a circle with a radius of 3 meters? Use 3.14 for π.

    F 0.942 m²   H 28.26 m²

    G 9.42 m²   I 282.6 m²

31. Find the volume of the cylinder to the nearest tenth. Use 3.14 for π.
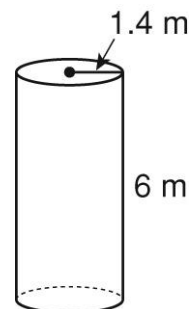
    A 12.3 m³

    B 26.4 m³

    C 36.9 m³

    D 158.3 m³

32. Find the surface area. Use 3.14 for π.

    F $183.1\overline{6}$ in²   H 533.8 in²

    G 188.4 in²   I $732.\overline{6}$ in²

33. The volume of a cylinder is 88 cubic inches. A smaller container, similar in shape, has a scale factor of $\dfrac{1}{2}$. What is the volume of the smaller container?

    A 11 in³   C 176 in³

    B 44 in³   D 704 in³

34. Helen has four jogging outfits and three pairs of shoes. How many different outfits can she make?

    F 1 outfit   H 10 outfits

    G 7 outfits   I 12 outfits

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35. The probability of drawing a blue card is $\dfrac{5}{11}$. What is the probability of NOT drawing a blue card?

   A $\dfrac{3}{11}$ C $\dfrac{6}{11}$

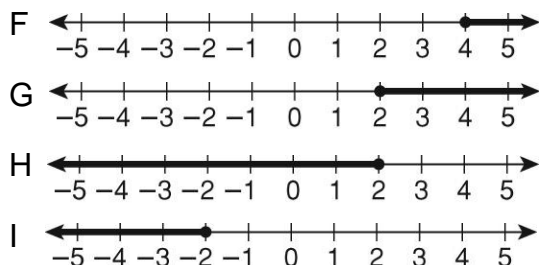   B $\dfrac{5}{11}$ D $\dfrac{4}{11}$

36. Kia's experimental probability of striking out at baseball is 13%. Out of 30 times at bat, about how many times will she strike out?

   F 4   H 12

   G 9   I 18

37. Solve $4w = 2w - 12$.

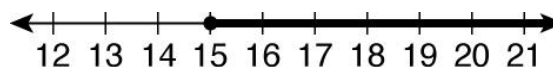   A $w = -6$ C $w = 2$

   B $w = -2$ D $w = 6$

38. Which is the graph of the solution set of $n - 3 \geq -1$.

   F
      −5 −4 −3 −2 −1 0 1 2 3 4 5

   G
      −5 −4 −3 −2 −1 0 1 2 3 4 5

   H
      −5 −4 −3 −2 −1 0 1 2 3 4 5

   I
      −5 −4 −3 −2 −1 0 1 2 3 4 5

39. Solve $-2n + 5 > 7$.

   A $n > 1$ C $n > -1$

   B $n < 1$ D $n < -1$

40. Which inequality has the following graphed solution?

   12 13 14 15 16 17 18 19 20 21

   F $45 > 3y$ H $3y < 45$

   G $3y \leq 45$ I $45 \leq 3$