MATH

SUMMER HOME LEARNING

GRADE 7

This summer home learning will be due the first week of school and it will be graded. These are the concepts you are expected to know coming into the 7th grade. Make sure that you show all your work for each question. You should complete the entire packet without the use of a calculator. No credit will be given to any question(s) you answer without showing work. Please use a pencil only and show your work. Use additional paper if necessary.
NO WORK = NO CREDIT

NAME: _____ PERIOD: _____ ID: _____

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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 $\frac{k}{-8} = -6$.
   A $k = -48$ C $k = 2$
   B $k = -14$ D $k = 48$
10. Convert $\frac{45}{20}$ to a decimal.
    F 2.25 H 0.25
    G $2\frac{1}{4}$ 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 $3\frac{6}{7} \div \frac{5}{21}$.
    A $\frac{5}{81}$ C $1\frac{4}{45}$
    B $\frac{45}{49}$ D $16\frac{1}{5}$

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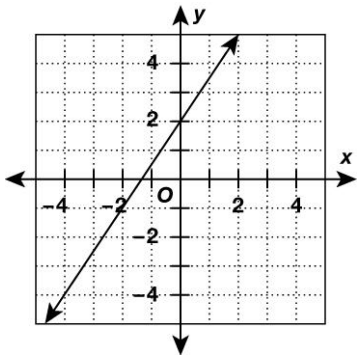
14. Solve $x - 6\frac{1}{2} = 3\frac{2}{3}$.

F $x = 10\frac{1}{6}$ H $x = 9\frac{1}{6}$

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

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



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

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

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 $\frac{5}{m} = \frac{15}{9}$.

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

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 $\frac{17}{20}$ H 0.85

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

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?

$5\frac{3}{4} + 2\frac{1}{2}$

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

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

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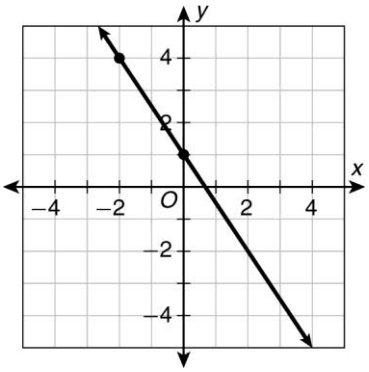
25. Which function represents a proportional relationship?

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 $-\frac{3}{2}$ H $\frac{2}{3}$

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

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 cm^2 C 37 cm^2

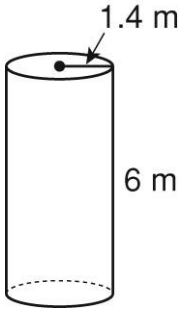
B 42.5 cm^2 D 18.5 cm^2

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

F 0.942 m^2 H 28.26 m^2

G 9.42 m^2 I 282.6 m^2

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



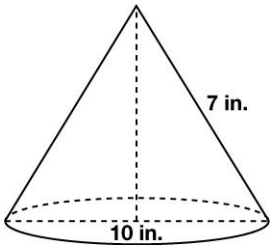
A 12.3 m^3

B 26.4 m^3

C 36.9 m^3

D 158.3 m^3

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



F 183.1$\overline{6}$ in^2 H 533.8 in^2

G 188.4 in^2 I 732.$\overline{6}$ in^2

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

What is the volume of the smaller container?

A 11 in^3 C 176 in^3

B 44 in^3 D 704 in^3

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

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

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

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

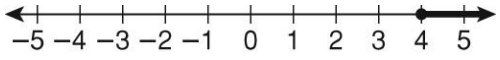
G 9 I 18

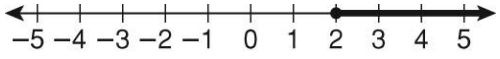
37. Solve $4w = 2w - 12$.

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

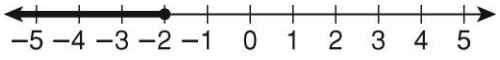
B $w = -2$ D $w = 6$

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

F 

G 

H 

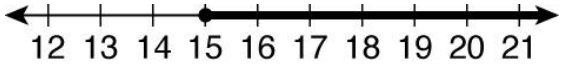
I 

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?



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

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