FRANKLIN LEARNING CENTER

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SUMMER WORK PACKAGE

For students entering 9th grade

FRANKLIN LEARNING CENTER

9th Grade Mathematics

SUMMER WORK PACKAGE

Directions:

Enclosed in the subsequent pages are multiple-choice questions designed for Grade 8 graduates. This summer work packet serves as a preparatory exercise aligned with the 9th grade Mathematics curriculum of the FLC High School

Each question will ask you to select an answer from among four choices.

For all questions:

- Read each question carefully and choose the best answer.
- You may use scratch paper to solve the problems.
- The Mathematics Reference Sheet is provided in the back of the test booklet. You may refer to this page any time
- You may not use a calculator
- Be sure to answer ALL the questions.

Remember only one of the answers provided is the correct response.

STOP.

1. **Use the table below to answer the question.**

Cost of Different Sport Balls

Kind	Cost
Soccer	$4.99
Baseball	$1.46
Basketball	$12.54
Football	$8.89
Volleyball	$6.43

Rounding to the nearest dollar, which shows how to estimate the cost of purchasing five sport balls, one of each type?

A. $31.00 = $4 + $1+ $ 12 + $8 + $6

B. $32.00 = $5 + $1+ $ 12 + $8 + $6

C. $34.00 = $5 + $1+ $ 13 + $9 + $6

D. $36.00 = $5 + $2+ $ 13 + $9 + $7

2. Marty has $80 to spend at a sporting goods store. He will spend $56 on a shirt, and then buy some darts. Each box of darts costs $6. He wants to buy as many boxes as possible. Which equation shows how to find the number of boxes of darts, x, he can buy?

A. $80 = 56 + 6x$

B. $80 = 56 - 6x$

C. $80 = (56)(6x)$

D. $80 = \frac{56}{6x}$

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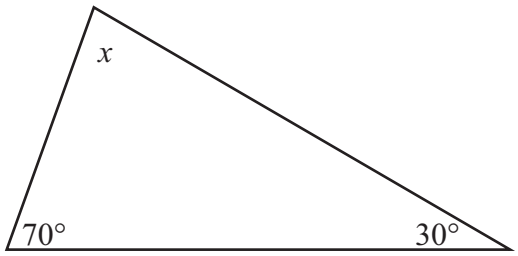
3. **Use the figure to answer the question below.**



What is the measure of angle x in the triangle?

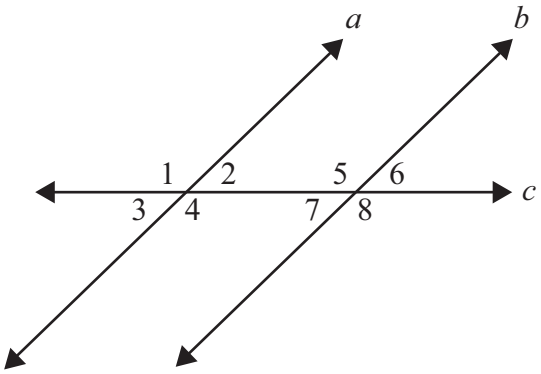
A. 30°

B. 60°

C. 80°

D. 150°

4. **Use the figure below to answer the question.**



Lines a and b are parallel. Line c is a transversal. Which statement is true?

A. $m\angle 1 \neq m\angle 4$, because they are opposite angles

B. $m\angle 1 = m\angle 6$, because they are supplementary angles

C. $m\angle 1 \neq m\angle 8$, because they are adjacent angles

D. $m\angle 1 = m\angle 4$, because they are vertical angles

Go on to the next page.

5. Which expression represents 4 less than twice a number, n ?

A. $4 - n$

B. $n - 4$

C. $4 - 2n$

D. $2n - 4$

6. **Use the table below to answer the question.**

Katelyn's Bowling Scores

Week	Bowling Score
1	136
2	145
3	123
4	140

The table shows Katelyn's bowling scores for a four-week time period. Her mean bowling score for the four weeks was 136. She bowled 126 the fifth week. What will be the change from the 4-week to the 5-week mean?

A. decrease by 10

B. decrease by 2

C. stay the same

D. increase by 3

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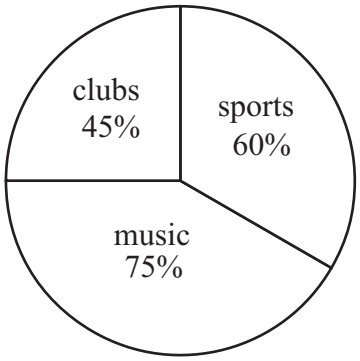
7. **Use the graph and table below to answer the question.**

Involvement in Activities



Involvement in Activities

Activity	Number of Students
clubs	45
music	75
sports	60

The circle graph shows the percent of students involved in each activity. The table shows the number of students in each activity. Which statement is caused by a misrepresentation of data in the circle graph?

A. Students are involved in clubs the least.

B. Students are involved in music the most.

C. Students are involved in three activities.

D. Students are involved in 180 percent of the activities.

8. What is the value of $12 + 2(12 - 9)^2$?

A. 24

B. 30

C. 84

D. 126

Go on to the next page.

9. What is the value of $\frac{2}{3} + (-\frac{1}{6})$?

   A. $-\frac{1}{2}$

   B. $\frac{1}{3}$

   C. $\frac{1}{2}$

   D. $\frac{5}{6}$

10. Which expression has a value of -2?

   A. $|2| + |-4|$

   B. $|-2| - |-4|$

   C. $|4| - |2|$

   D. $|-4| + |2|$

11. Becky is tossing a six-sided number cube labeled 1, 2, 3, 4, 5, and 6. What is the probability of tossing 6 two times in a row?

    A. $\frac{1}{36}$

    B. $\frac{1}{6}$

    C. $\frac{1}{3}$

    D. $\frac{1}{2}$

12. Which represents the value of x in $6 - 4x \leq 26$?

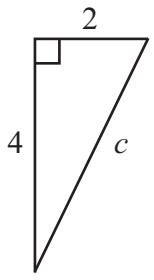
    A. $x \leq -8$

    B. $x \geq -8$

    C. $x \leq -5$

    D. $x \geq -5$

13. **Use the figure below to answer the question.**



    Using the Pythagorean Theorem, what is the value of c?

    A. $\sqrt{6}$ units

    B. $\sqrt{20}$ units

    C. 6 units

    D. 20 units

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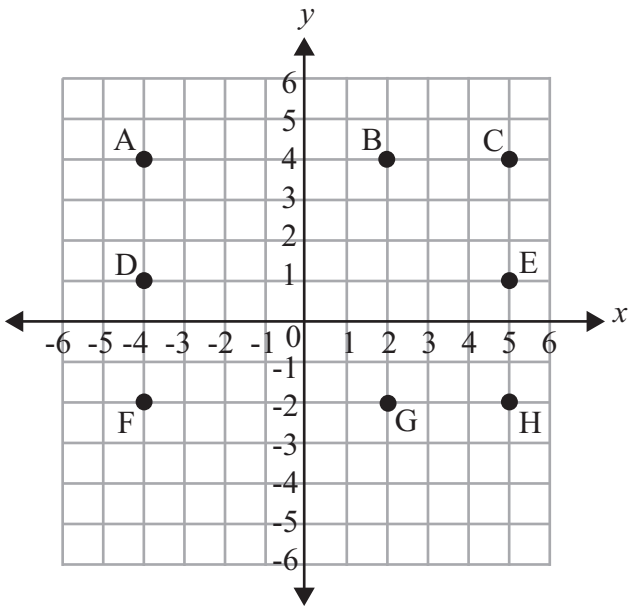
14. **Use the coordinate grid below to answer the question.**



Which four points would be the vertices of a square?

A. points A, B, G, F

B. points A, C, E, D

C. points B, C, H, G

D. points A, C, H, F

15. **Use the table below to answer the question**.

Heart Rate	78	71	79	80	40	71

The table shows the resting heart rates in beats per minutes of six students. The rate, 40 beats per minute, seems to be an outlier. Which measure of central tendency changes the least by dropping 40 from the data?

A. mean

B. median

C. mode

D. range

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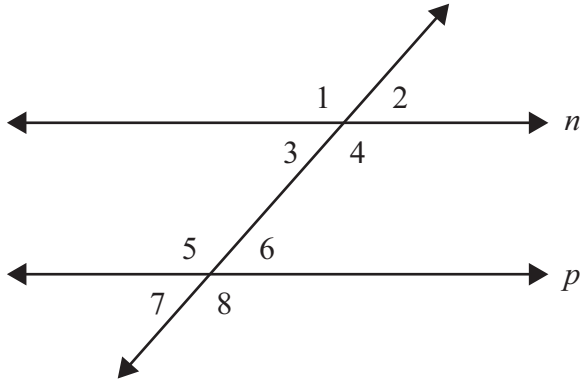
16. **Use diagram below to answer the question.**



The lines n and p are parallel. Which angle is supplementary to $\angle 7$?

A. $\angle 2$

B. $\angle 3$

C. $\angle 6$

D. $\angle 8$

17. The sum of a number, n, and 5 is subtracted from 8. Which expression represents this statement?

A. $8 - (n + 5)$

B. $(n + 5) + 8$

C. $(n + 5) - 8$

D. $8 + (n + 5)$

18. What is the value of w in $0.8w - \frac{7}{2} = \frac{1}{2}$?

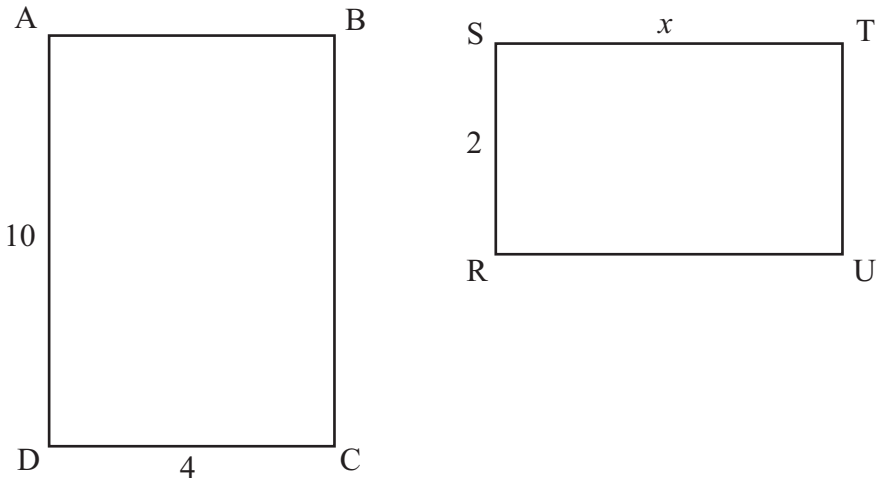
A. $w = 3.2$

B. $w = 5$

C. $w = 37.5$

D. $w = 50$

19. **Use the figures below to answer the question.**



Rectangle ABCD is similar to rectangle RSTU. What is the value of x?

A. 4

B. 5

C. 8

D. 20

20. How is 0.5600 written in scientific notation?

    A. 5.6×10

    B. 5.6×10^{-1}

    C. 5.6×10^{-2}

    D. 5.6×10^{-3}

21. What is the value of x in $3(x - 4) = -21$?

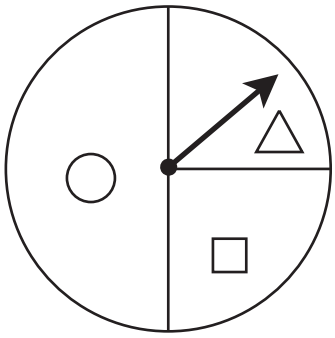
    A. $x = -11$

    B. $x = -3$

    C. $x = 3$

    D. $x = 11$

22. **Use the spinner below to answer the question.**



What is the probablilty of the arrow NOT landing on the space with the △ ?

A. $\frac{1}{4}$

B. $\frac{1}{3}$

C. $\frac{1}{2}$

D. $\frac{3}{4}$

23. Johnny jogged around the track 16 times. Each lap is 400 meters. Which process could determine the total distance he jogged?

A. add 16 and 400

B. divide 400 by 16

C. multiply 400 by 16

D. subtract 16 from 400

24. **Use the table below to answer the question.**

Gas Mileage

Stop	Distance (miles)	Gas (gallons)
1	350	13
2	270	11
3	375	14
4	260	10
5	305	12
Total	1560	60

At each stop, Bob recorded the distance he traveled and the amount of gas he purchased for his car. In simplest form, what is the ratio of total miles driven to total gallons of gas used?

A. $\frac{1}{60}$

B. $\frac{1}{26}$

C. $\frac{26}{1}$

D. $\frac{60}{1}$

STOP.

FLC - Grade 8 Reference Sheet

Shape	Area	Circumference
Circle	$A = \pi r^2$	$C = \pi d = 2\pi r$
Triangle	$A = \frac{1}{2} bh$	**Perimeter**
Rectangle	$A = lw$	$P = 2l + 2w = 2(l + w)$
Trapezoid	$A = \frac{1}{2} h(b_1 + b_2)$	
Parallelogram	$A = bh$	
Square	$A = s^2$	

Key	
b = base	w = width
B = area of base	d = diameter
h = height	r = radius
l = length	
Use 3.14 for π	

3 – Dimensional Shape	Volume
Rectangular Prism	$V = lwh = Bh$

Pythagorean Theorem
$c^2 = a^2 + b^2$

Standard Units	Metric Units
Conversions – Length	
1 yard (yd) = 3 feet (ft) = 36 inches (in.)	1 meter (m) = 100 centimeters (cm)
1 mile (mi) = 1,760 yards (yd) = 5,280 feet (ft)	1 meter (m) = 1,000 millimeters (mm)
	1 kilometer (km) = 1,000 meters (m)
Conversions – Volume	
1 cup = 8 fluid ounces (fl oz)	1 liter (l) = 1,000 milliliters (ml)
1 pint (pt) = 2 cups	1 liter (l) = 1,000 cubic centimeters (cu. cm)
1 quart (qt) = 2 pints (pt)	
1 gallon (gal.) = 4 quarts (qt)	
Conversions – Weight/Mass	
1 pound (lb) = 16 ounces (oz)	1 gram (g) = 1,000 milligrams (mg)
1 ton = 2,000 pounds (lb)	1 kilogram (kg) = 1,000 grams (g)