15th Annual

MATHLETES CHALLENGE

2020

ROUND ONE

TEST 1

1 A pet store owner will order dog beds for his shop. The relationship between x, the number of boxes he will order, and y, the number of dog beds he will receive, can be represented by the equation $y = 12x$.

Which table contains only values that represent the equation?

A

Dog Beds

Number of Boxes, x	Number of Dog Beds, y
3	36
6	72
9	108
15	180

C

Dog Beds

Number of Boxes, x	Number of Dog Beds, y
3	36
6	72
9	108
15	144

B

Dog Beds

Number of Boxes, x	Number of Dog Beds, y
2	14
6	18
10	22
14	26

D

Dog Beds

Number of Boxes, x	Number of Dog Beds, y
2	24
6	36
10	48
14	60

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2. Mr. Nolan paid \$36.95 for each adult shirt and \$23.95 for each youth shirt he bought. Mr. Nolan bought 2 adult shirts and 5 youth shirts.

How much money did he spend on these shirts?

A \$167.35

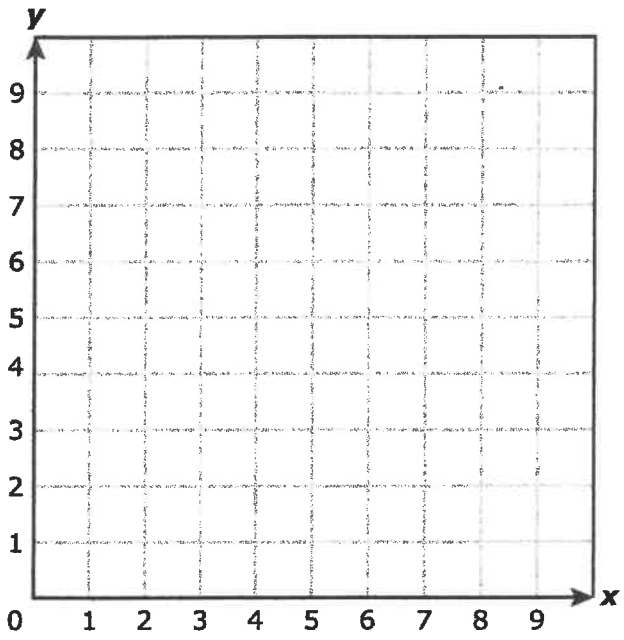
B \$258.65

C \$232.65

D \$193.65

3 Jim plotted the following ordered pairs on a coordinate grid.

(1, 3) (3, 6) (7, 6) (9, 3)



Jim connected the points with line segments to form a polygon. Which point is located inside the polygon?

A (4, 5)

B (8, 6)

C (5, 7)

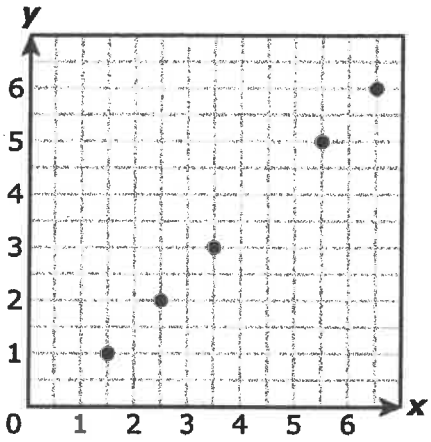
D (3, 1)

4. A table of ordered pairs is shown.

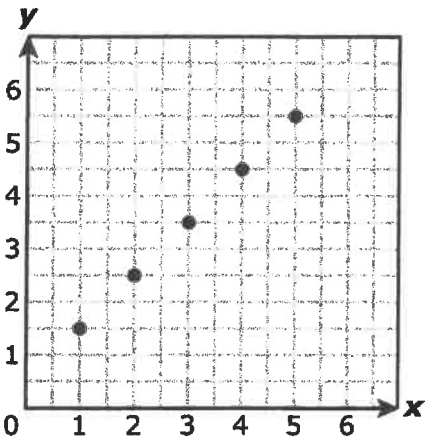
x	1	2	3	5	6
y	$1\frac{1}{2}$	$2\frac{1}{2}$	$3\frac{1}{2}$	$5\frac{1}{2}$	$6\frac{1}{2}$

Which graph best represents these ordered pairs?

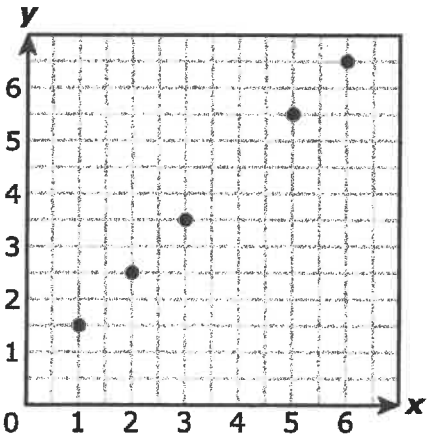
A



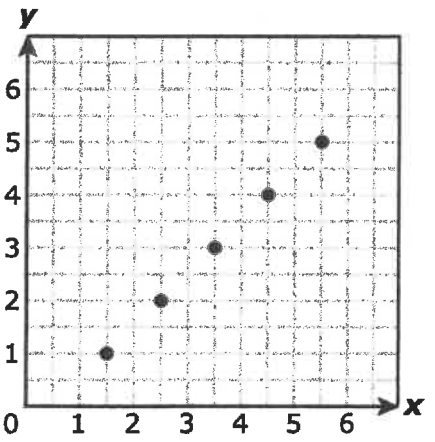
C



B

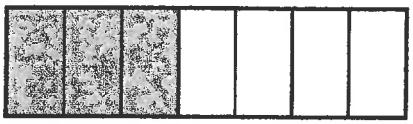


D

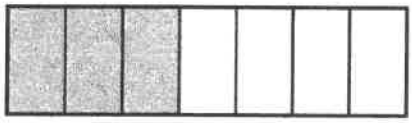


5 Darenda worked for 3 weeks. The shaded parts of the model represent the fraction of each week she worked from her home office.

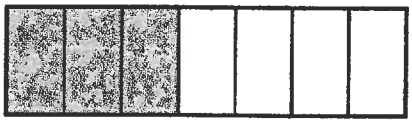
Week 1

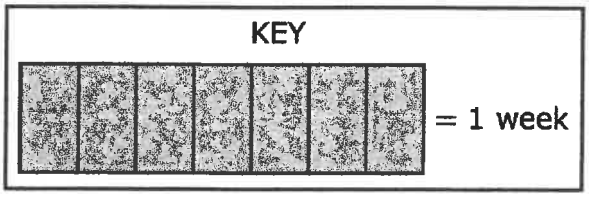


Week 2



Week 3





Which expression can be used to determine the number of weeks Darenda worked from her home office over these 3 weeks?

A $3 + \frac{3}{4}$

B $3 + \frac{3}{7}$

C $3 \times \frac{3}{4}$

D $3 \times \frac{3}{7}$

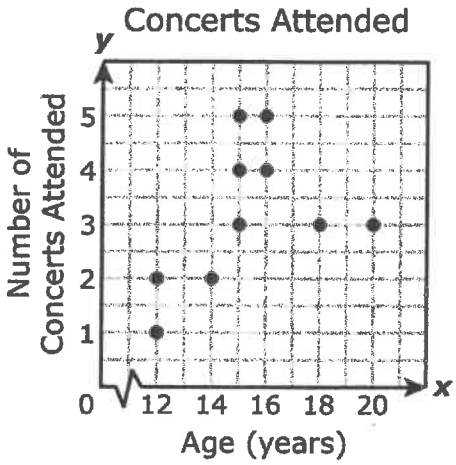
6. The table shows the ages of 10 people and the numbers of concerts they attended in the last year.

Concerts Attended

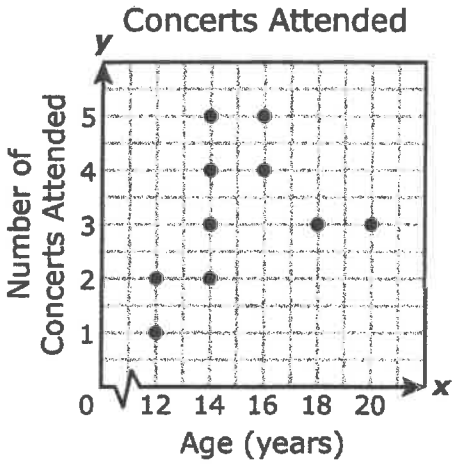
Age of Person (years)	15	12	20	16	14	18	15	16	12	15
Number of Concerts Attended	5	2	3	5	2	3	3	4	1	4

Which scatterplot best represents all the data in the table?

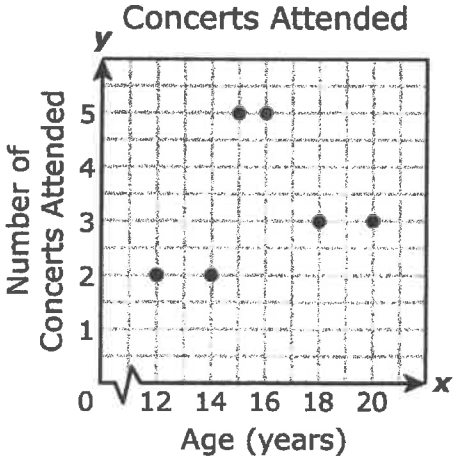
A



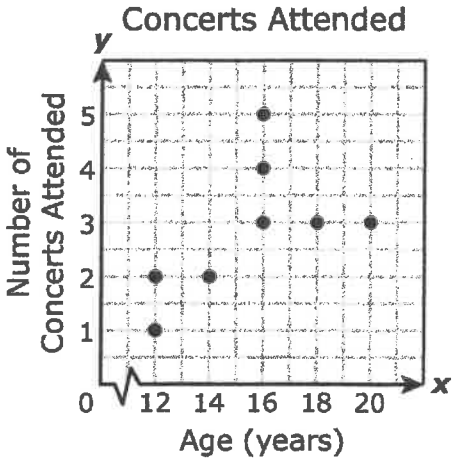
C



B



D



7 Ms. Jaffey had a total of 428.5 ounces of pretzels to put into 5 bowls for a party. She put an equal number of ounces of pretzels into each bowl.

How many ounces of pretzels did Ms. Jaffey put into each bowl?

A 85.7 oz

B 97.7 oz

C 80.0 oz

D 85.3 oz

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8 Jacob wrote the expression shown.

$$10 \div 5 + 4(72 - 6)$$

What do these parentheses indicate in the expression?

A ● Divide 10 by 5 before adding 4

B ● Multiply 4 by 72 before subtracting 6

C ● Add 5 and 4 together before subtracting 6 from 72

D ● Subtract 6 from 72 before multiplying by 4

9 The owner of a snow-cone stand used $\frac{1}{4}$ gallon of syrup to make 16 cherry snow cones. She used the same amount of syrup in each snow cone.

How much syrup in gallons was used in each cherry snow cone?

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

B 4 gal

C $\frac{1}{64}$ gal

D 64 gal

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10 Cheyenne works 15 hours a week at the movie theater. She earns $8 an hour.

Which statement about her weekly income is true?

A Her net income is more than $120.

B Her gross income is less than $120.

C Her net income is less than $120.

D Her gross income is more than $120.

11 Three friends rode their bikes last week.

- Christine rode her bike 27 kilometers.
- Philip rode his bike 12 kilometers less than Christine.
- Nathan rode his bike 3 times as far as Philip.

Which equation represents n, the distance in kilometers Nathan rode his bike?

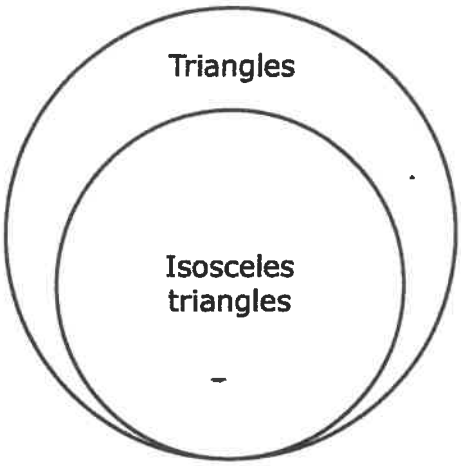
A $(27 + 12) \div 3 = n$

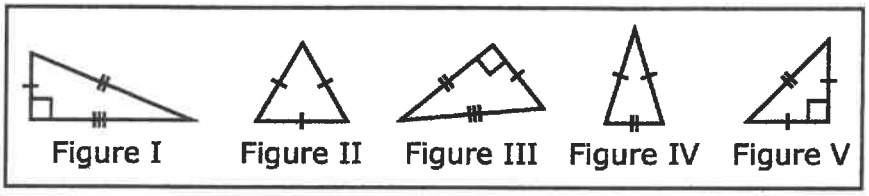
B $(27 - 12) \times 3 = n$

C $(27 - 12) \div 3 = n$

D $(27 + 12) \times 3 = n$

12 A student used this graphic organizer to classify different figures.





Which figures belong in the part of the organizer labeled "Isosceles triangles"?

A ● Figures II and V only

B ● Figures I, III, and V only

C ● Figures I and III only

D ● Figures II, IV, and V only

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13 Dion ran 3.75 kilometers each day to prepare for a race. What was the number of kilometers that Dion ran during 28 days?

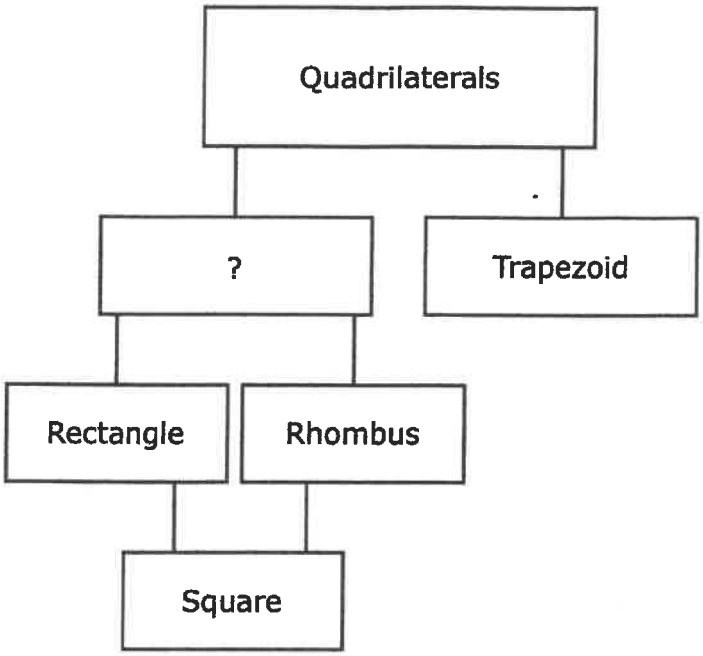
A 10.5 km

B 105 km

C 1,875 km

D 18.75 km

14. Akshar is making a mobile that lists quadrilaterals.



What is the name of the subset of quadrilaterals missing from Akshar's mobile?

A Hexagon

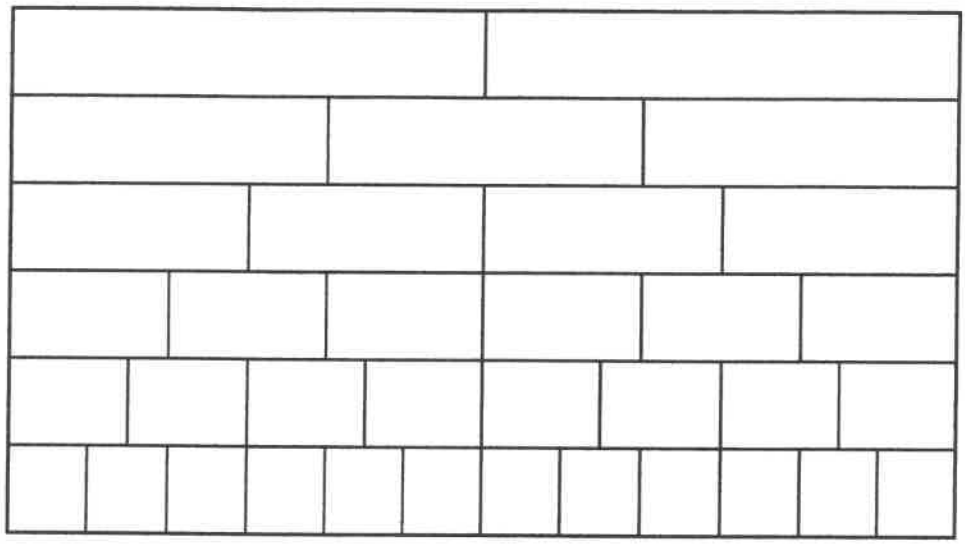
B Polygon

C Parallelogram

D Triangle

15 Vanna used the fraction strips shown to help her determine the difference between $\frac{5}{6}$ and $\frac{1}{4}$.

Fraction Strips



What is $\frac{5}{6} - \frac{1}{4}$?

A $\frac{1}{5}$

B $\frac{7}{12}$

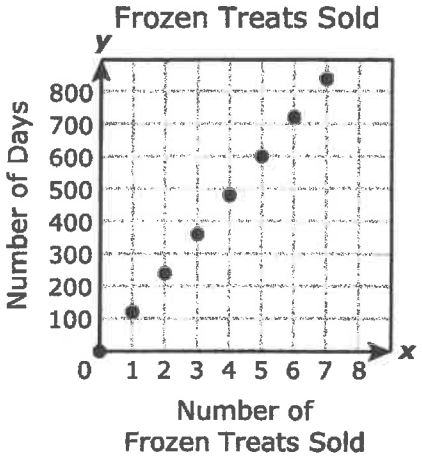
C $\frac{1}{2}$

D $\frac{5}{8}$

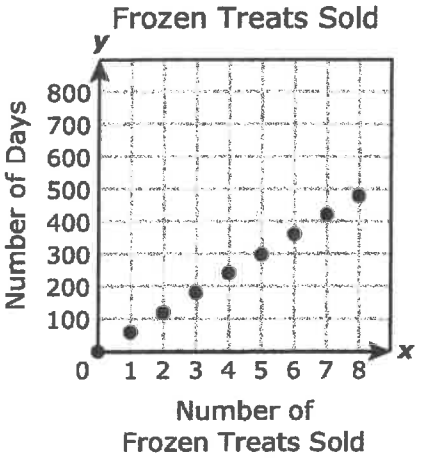
16. The owner of a food cart sells an average of 120 frozen treats per day during the summer.

Which graph best shows this relationship between the number of days and the number of frozen treats sold?

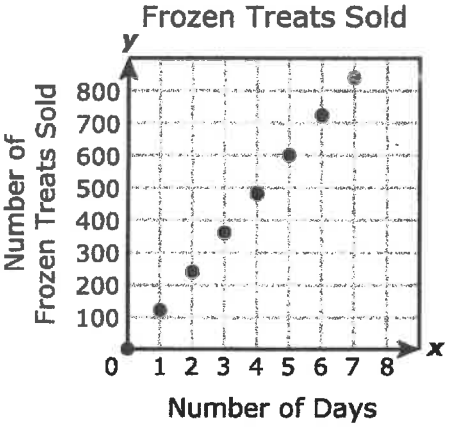
A



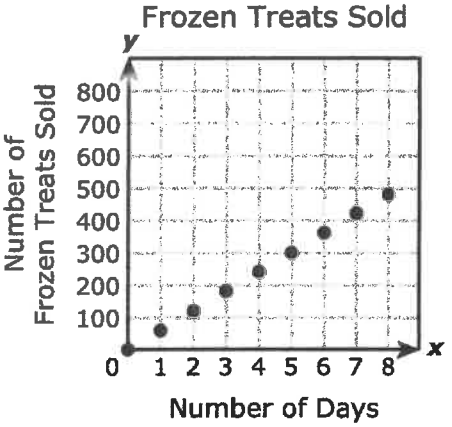
C



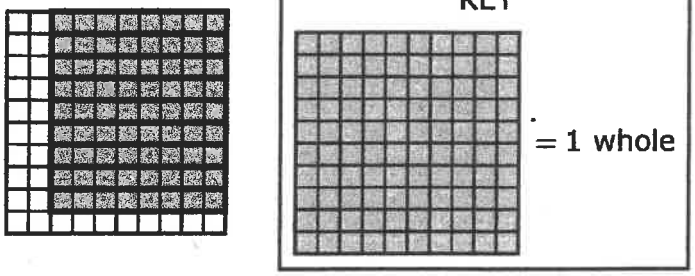
B



D



17 The hundredths model is shaded to represent a division problem.



Which equation is represented by the model?

A $0.72 \div 9 = 9$

B $0.72 \div 9 = 0.09$

C $0.72 \div 9 = 8$

D $0.72 \div 9 = 0.08$

---

18 Yvonne is using a coordinate grid for the first time. She wants to find the location of the ordered pair (3, 7) on the grid.

Starting at the origin, which movement should Yvonne do first?

A ● Move right along the *x*-axis to 3

B ● Move up along the *y*-axis to 3

C ● Move right along the *y*-axis to 7

D ● Move up along the *x*-axis to 7

19 Mr. Wilfred used a full 2-liter bottle of liquid soap to fill two soap containers.

- He put 0.475 liter of soap in the first container.
- He put 0.35 liter of soap in the second container.

How many liters of liquid soap remained in the bottle?

A 0.825 L

B 0.625 L

C 1.175 L

D 1.49 L

---

20 The stem and leaf plot shows the numbers of sit-ups a group of students did in P.E.

Number of Sit-ups

Stem	Leaf
0	9
1	3 7 9
2	0 3 6
3	1 2 5 5 7
4	4 6 7 7
5	0 3
6	2 2
7	6
8	
9	0 2

6|2 means 62.

What is the difference between the number of students who did more than 36 sit-ups and the number of students who did fewer than 25 sit-ups?

A ● 11

B ● 6

C ● 18

D ● 1

2020 Mathletes Challenge Answer Key
Round 1

TEST 1	TEST 2
1. A	1. C
2. D	2. B
3. A	3. D
4. B	4. B
5. D	5. C
6. A	6. D
7. A	7. A
8. D	8. A
9. C	9. D
10. C	10. B
11. B	11. C
12. D	12. A
13. B	13. A
14. C	14. B
15. B	15. C
16. B	16. C
17. D	17. A
18. A	18. A
19. C	19. C
20. B	20. D