Name: _____

New York State Testing Program

Mathematics Test
Session 1
Grade 6

v202

Released Questions

Session 1

TIPS FOR TAKING THE TEST

Here are some suggestions to help you do your best:

- Read each question carefully and think about the answer before making your choice.
- You have been provided with mathematics tools (a ruler and a protractor) and a reference sheet to use during the test. It is up to you to decide when each tool and the reference sheet will be helpful. You should use mathematics tools and the reference sheet whenever you think they will help you to answer the question.

Grade 6 Mathematics Reference Sheet

CONVERSIONS

1 inch = 2.54 centimeters
1 meter = 39.37 inches
1 mile = 5,280 feet
1 mile = 1,760 yards
1 mile = 1.609 kilometers

1 kilometer = 0.62 mile
1 pound = 16 ounces
1 pound = 0.454 kilogram
1 kilogram = 2.2 pounds
1 ton = 2,000 pounds

1 cup = 8 fluid ounces
1 pint = 2 cups
1 quart = 2 pints
1 gallon = 4 quarts
1 gallon = 3.785 liters
1 liter = 0.264 gallon
1 liter = 1,000 cubic centimeters

FORMULAS

Triangle	$A = \frac{1}{2}bh$
Right Rectangular Prism	$V = Bh$ or $V = lwh$

1 An equation is shown below.

$$12 - 9 + c = 12$$

What value of c makes the equation true?

A 0

B 3

C 9

D 12

2 Kate has a coin collection. She keeps 7 of the coins in a box, which is only 5% of her entire collection. What is the total number of coins in Kate's coin collection?

A 12

B 14

C 120

D 140

3 What is the greatest common factor of 36 and 90 ?

A 6

B 18

C 36

D 180

4 The relationship between Robert's age, r, and Julia's age, j, can be represented by the equation shown below.

$$r = j + 3$$

Which table of values represents the relationship between Robert's age and Julia's age?

A

POSSIBLE AGES

Robert's Age, *r* (years)	Julia's Age, *j* (years)
9	12
15	18
21	24

C

POSSIBLE AGES

Robert's Age, *r* (years)	Julia's Age, *j* (years)
9	6
15	12
21	18

B

POSSIBLE AGES

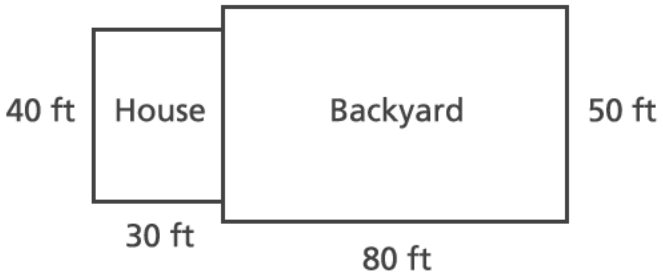
Robert's Age, *r* (years)	Julia's Age, *j* (years)
9	3
15	5
21	7

D

POSSIBLE AGES

Robert's Age, *r* (years)	Julia's Age, *j* (years)
9	27
15	45
21	63

5 The diagram below shows the dimensions of a rectangular house with a rectangular backyard.



What is the total area, in square feet, of the house and backyard?

A 200

B 400

C 4,000

D 5,200

6 A bagel shop sold 8 plain bagels and 13 rye bagels. What is the ratio of the number of rye bagels to the number of plain bagels sold?

A 8 : 13

B 13 : 8

C 8 : 21

D 21 : 8

7 A rectangle is graphed on a coordinate plane. The coordinates for two of the vertices of the rectangle are $(-5, 8)$ and $(-5, -6)$. What is the distance between the two vertices?

A 2 units

B 4 units

C 10 units

D 14 units

8 What value of m makes the equation below true?

$$m + 7.9 = 39\frac{1}{2}$$

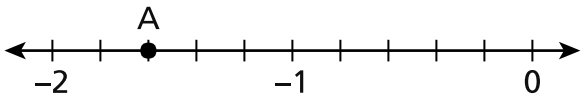
A 5.0

B 31.6

C 32.4

D 47.4

9 Point A is shown on the number line below.



What is the location of point A ?

A -1.3

B -1.35

C -1.6

D -1.75

10 A right rectangular prism has a base with an area of $25\frac{1}{2}$ square feet and a volume of 153 cubic feet. What is the height, in feet, of the right rectangular prism?

A 6

B 51

C $127\frac{1}{2}$

D $3,901\frac{1}{2}$

11 All the students in the sixth grade either purchased their lunch or brought their lunch from home on Monday.

- 24% of the students purchased their lunch.
- 190 students brought their lunch from home.

How many students are in the sixth grade?

A 76

B 166

C 214

D 250

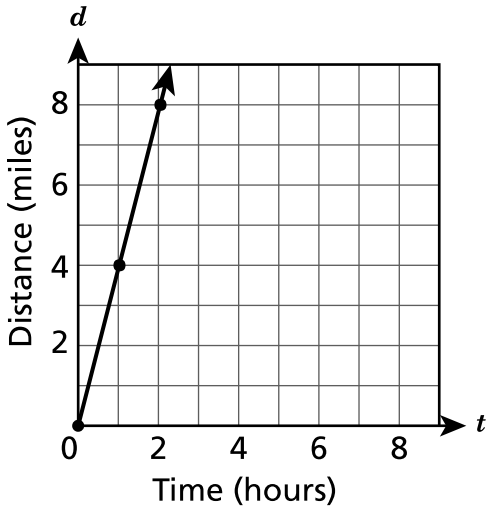
GO ON

12 Joe walks on a treadmill at a constant rate. The equation below describes the relationship between t, the time he walks in hours, and d, the distance he walks in miles.

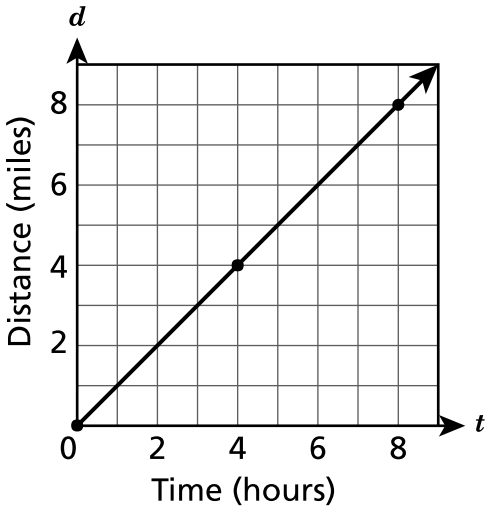
$$d = 4t$$

Which graph represents the relationship between the amount of time Joe walks and the distance he walks?

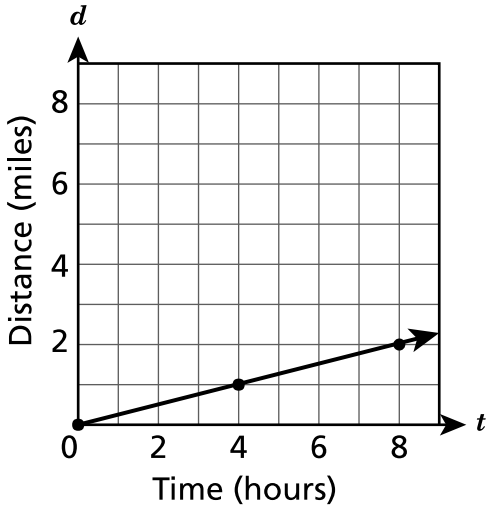
A



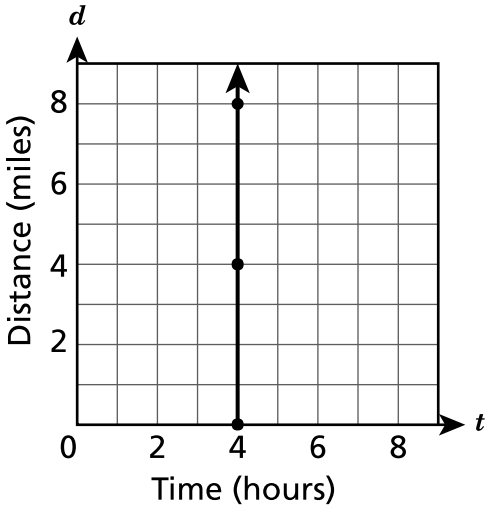
C



B



D



13 An expression is shown below.

$$\frac{143 - 35}{3^3}$$

What is the value of the expression?

A 4

B 9

C 12

D 18

14 There are 230 calories in 4 ounces of a type of ice cream. How many calories are in 6 ounces of that ice cream?

A 232

B 236

C 345

D 460

15 What value of x makes the equation $33x = 11$ true?

A $\frac{1}{3}$

B $\frac{3}{11}$

C $\frac{11}{3}$

D 3

16 A shape is made of 12 right triangles of equal size. Each right triangle has a base of 4 cm and a height of 5 cm. What is the total area, in square centimeters, of the shape?

A 10

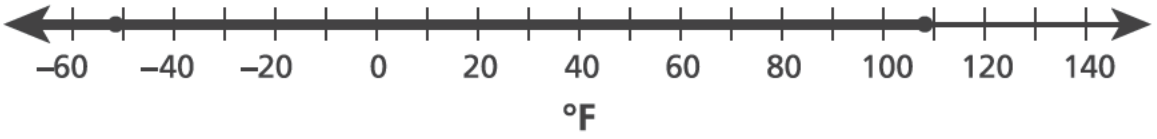
B 60

C 120

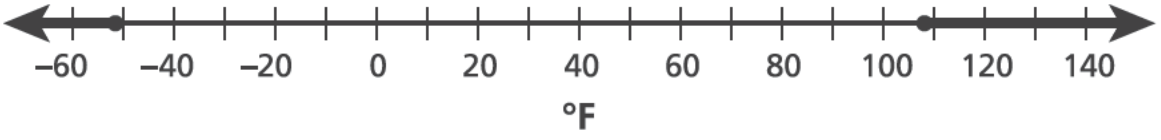
D 240

17 According to the National Climatic Data Center, the lowest recorded temperature in the state of New York is $-52^{\circ}\mathrm{F}$ and the highest is $108^{\circ}\mathrm{F}$. Based on these values, which number line **best** represents the range of temperatures in the state of New York?

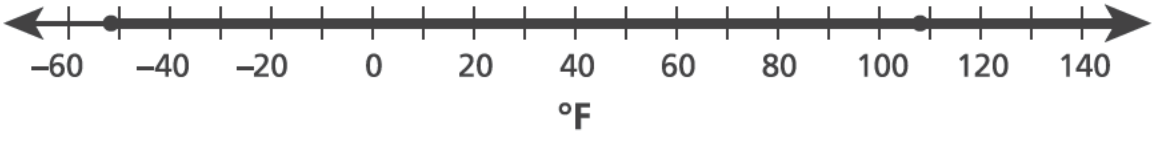
A



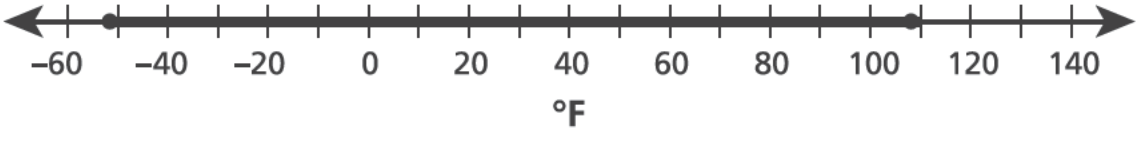
B



C



D



18 Pat bounces a basketball 25 times in 30 seconds. At that rate, approximately how many times will Pat bounce the ball in 150 seconds?

A 120

B 125

C 144

D 145

19 Which expression is equivalent to $5(4x + 3) - 2x$?

A $18x + 15$

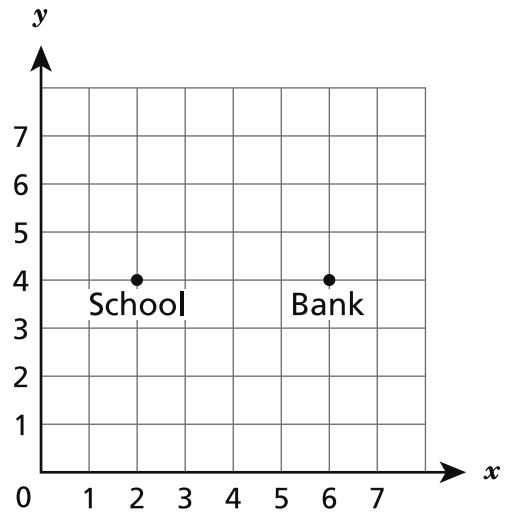
B $18x + 3$

C $7x + 8$

D $2x + 8$

GO ON

20 Mark graphed points on the coordinate plane below to represent the locations of his school and a bank.



Mark wants to add the location of the library on the coordinate plane. The distance from the library to the school is the same as the distance from the bank to the school. Which ordered pair could be the coordinates of the library?

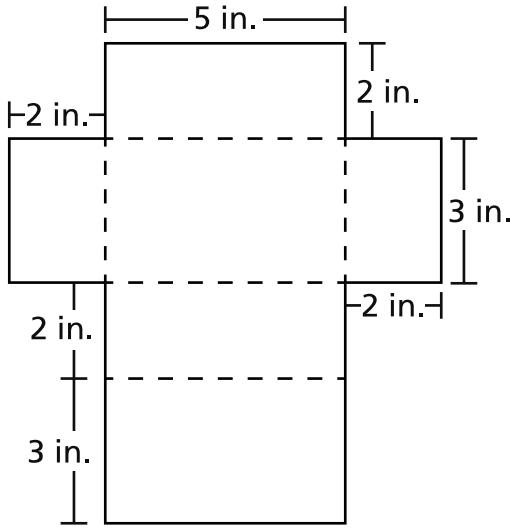
A $(2, 4)$

B $(2, 8)$

C $(4, 4)$

D $(6, 8)$

21 A student draws the net below to show the dimensions of a container that is shaped like a right rectangular prism.



What is the surface area, in square inches, of the container?

A 19

B 30

C 38

D 62

22 Which two expressions are equivalent?

A $x + x + x$ and x^3

B $14x + 10 - 2x$ and $16x + 10$

C $12x + 16x$ and $4(3x + 4x)$

D $12x^2 + 5x + 10$ and $17x^2 + 10$

GO ON

23 A machine fills boxes at a constant rate. At the end of 35 minutes, it has filled 5 boxes. Which table represents the relationship between the number of minutes the machine fills boxes and the number of boxes it has filled?

A

FILLING BOXES

Time (minutes)	Boxes Filled
7	1
14	2
21	3
28	4

C

FILLING BOXES

Time (minutes)	Boxes Filled
1	7
2	14
3	21
4	28

B

FILLING BOXES

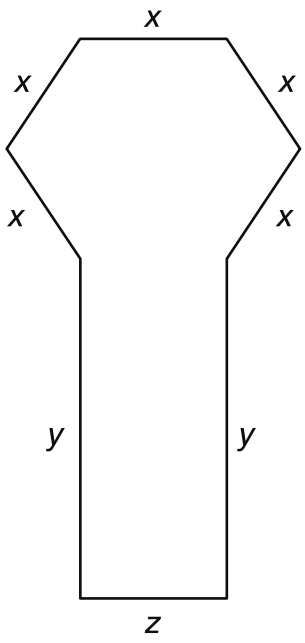
Time (minutes)	Boxes Filled
5	1
10	2
15	3
20	4

D

FILLING BOXES

Time (minutes)	Boxes Filled
1	5
2	10
3	15
4	20

24 Which expression represents the perimeter of the figure below?



A $5x + 2y$

B $x + y + z$

C $5x + 2y + z$

D $(5 + 2 + 1)(x + y + z)$

STOP

THE STATE EDUCATION DEPARTMENT

THE UNIVERSITY OF THE STATE OF NEW YORK / ALBANY, NY 12234

2021 Mathematics Tests Map to the Standards

Grade 6 Released Questions

Question	Type	Key	Points	Standard	Cluster	Subscore	Secondary Standard(s)
Session 1							
1	Multiple Choice	C	1	CCSS.Math.Content.6.EE.B.5	Expressions and Equations	Expressions and Equations	
2	Multiple Choice	D	1	CCSS.Math.Content.6.RP.A.3c	Ratios and Proportional Relationships	Ratios and Proportional Relationships	
3	Multiple Choice	B	1	CCSS.Math.Content.6.NS.B.4	The Number System	The Number System	
4	Multiple Choice	C	1	CCSS.Math.Content.6.EE.C.9	Expressions and Equations	Expressions and Equations	
5	Multiple Choice	D	1	CCSS.Math.Content.6.EE.A.2c	Expressions and Equations	Expressions and Equations	
6	Multiple Choice	B	1	CCSS.Math.Content.6.RP.A.1	Ratios and Proportional Relationships	Ratios and Proportional Relationships	
7	Multiple Choice	D	1	CCSS.Math.Content.6.G.A.3	Geometry		
8	Multiple Choice	B	1	CCSS.Math.Content.6.EE.B.7	Expressions and Equations	Expressions and Equations	
9	Multiple Choice	C	1	CCSS.Math.Content.6.NS.C.6c	The Number System	The Number System	
10	Multiple Choice	A	1	CCSS.Math.Content.6.G.A.2	Geometry		
11	Multiple Choice	D	1	CCSS.Math.Content.6.RP.A.3c	Ratios and Proportional Relationships	Ratios and Proportional Relationships	
12	Multiple Choice	A	1	CCSS.Math.Content.6.EE.C.9	Expressions and Equations	Expressions and Equations	
13	Multiple Choice	A	1	CCSS.Math.Content.6.EE.A.1	Expressions and Equations	Expressions and Equations	
14	Multiple Choice	C	1	CCSS.Math.Content.6.RP.A.3b	Ratios and Proportional Relationships	Ratios and Proportional Relationships	
15	Multiple Choice	A	1	CCSS.Math.Content.6.EE.B.5	Expressions and Equations	Expressions and Equations	
16	Multiple Choice	C	1	CCSS.Math.Content.6.G.A.1	Geometry		
17	Multiple Choice	D	1	CCSS.Math.Content.6.NS.C.6	The Number System	The Number System	
18	Multiple Choice	B	1	CCSS.Math.Content.6.RP.A.3b	Ratios and Proportional Relationships	Ratios and Proportional Relationships	
19	Multiple Choice	A	1	CCSS.Math.Content.6.EE.A.3	Expressions and Equations	Expressions and Equations	
20	Multiple Choice	B	1	CCSS.Math.Content.5.G.A.2	The Number System	The Number System	
21	Multiple Choice	D	1	CCSS.Math.Content.6.G.A.4	Geometry		
22	Multiple Choice	C	1	CCSS.Math.Content.6.EE.A.4	Expressions and Equations	Expressions and Equations	
23	Multiple Choice	A	1	CCSS.Math.Content.6.RP.A.3a	Ratios and Proportional Relationships	Ratios and Proportional Relationships	
24	Multiple Choice	C	1	CCSS.Math.Content.6.EE.B.6	Expressions and Equations	Expressions and Equations	

This item map is intended to identify the primary analytic skills necessary to successfully answer each question. However, some questions measure proficiencies described in multiple standards, including a balanced combination of procedural and conceptual understanding.