Kentucky Summative Assessments

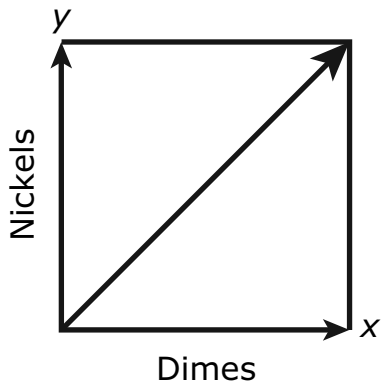
Grade 8 Mathematics
Released Items
2025

1

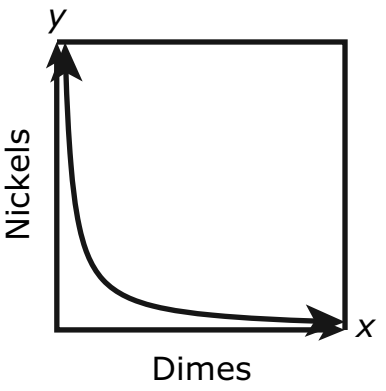
MA0820047_3

Which graph represents the equation $y = 150 - 2x$, where y is the number of nickels and x is the number of dimes in a stack of 150 coins?

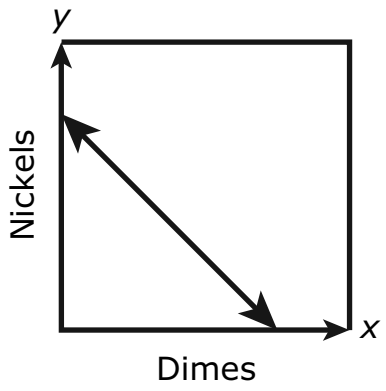
A



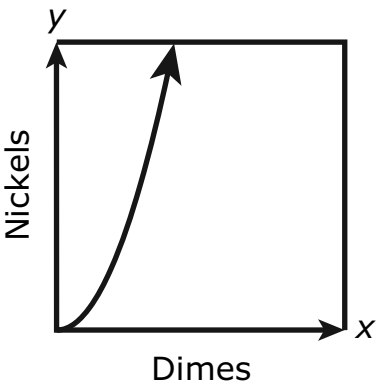
B



C



D



Released Item Performance

Kentucky Summative Assessments

Spring 2025
Grade 8
Mathematics

Item: MA0820047
Book Question Number: 1

Standard: KY.8.F.3.a

Item Type: MC
Key: C

Student Group	Number of Students	Percent Correct	Average Item Score	Item Breakout Statistics - Answer Choice Options			
				A (%)	B (%)	C (%)	D (%)
All Students	**10,715**	43%	0.43	19%	20%	43%	19%
Gender							
Female	**5,346**	43%	0.43	19%	20%	43%	18%
Male	**5,368**	42%	0.42	19%	19%	42%	20%
Ethnicity							
African American	**1,079**	32%	0.32	23%	27%	32%	18%
American Indian or Alaska Native	**14**	21%	0.21	29%	14%	21%	36%
Asian	**235**	57%	0.57	12%	15%	57%	16%
Hispanic or Latino	**1,012**	38%	0.38	22%	18%	38%	22%
Native Hawaiian or Pacific Islander	**19**	26%	0.26	11%	21%	26%	42%
White (non-Hispanic)	**7,789**	44%	0.44	18%	19%	44%	18%
Two or more races	**565**	42%	0.42	22%	18%	42%	18%
Migrant	**38**	39%	0.39	24%	16%	39%	21%
English Learner	**455**	29%	0.29	27%	22%	29%	22%
Economically Disadvantaged	**6,137**	38%	0.38	21%	21%	38%	20%
Students with Disabilities	**743**	35%	0.35	27%	21%	35%	17%

2

MA0820002_3

Which statement about the number $\frac{1}{8}$ is true?

A The number $\frac{1}{8}$ is rational because the value of the fraction cannot be written in decimal form.

B The number $\frac{1}{8}$ is irrational because the value of the fraction cannot be written in decimal form.

C The number $\frac{1}{8}$ is rational because the value of the fraction ends in zeros when written in decimal form.

D The number $\frac{1}{8}$ is irrational because the value of the fraction ends in zeros when written in decimal form.

Released Item Performance

Kentucky Summative Assessments

Spring 2025
Grade 8
Mathematics

Item: MA0820002
Book Question Number: 2

Standard: KY.8.NS.1

Item Type: MC
Key: C

Student Group	Number of Students	Percent Correct	Average Item Score	Item Breakout Statistics - Answer Choice Options			
				A (%)	B (%)	C (%)	D (%)
All Students	**25,020**	52%	0.52	17%	17%	52%	14%
Gender							
Female	**11,931**	52%	0.52	17%	17%	52%	14%
Male	**13,089**	52%	0.52	17%	18%	52%	13%
Ethnicity							
African American	**2,860**	42%	0.42	21%	20%	42%	16%
American Indian or Alaska Native	**30**	53%	0.53	10%	23%	53%	13%
Asian	**525**	64%	0.64	13%	14%	64%	10%
Hispanic or Latino	**2,816**	46%	0.46	21%	19%	46%	14%
Native Hawaiian or Pacific Islander	**58**	47%	0.47	28%	9%	47%	17%
White (non-Hispanic)	**17,501**	54%	0.54	16%	17%	54%	14%
Two or more races	**1,229**	51%	0.51	17%	19%	51%	14%
Migrant	**166**	34%	0.34	22%	25%	34%	19%
English Learner	**1,973**	37%	0.37	24%	23%	37%	16%
Economically Disadvantaged	**15,154**	47%	0.47	19%	19%	47%	15%
Students with Disabilities	**4,218**	39%	0.39	21%	22%	39%	18%

3

MA0820019_1

A system of equations contains two equations and has no solution. One of the equations is $12x + y = 9$.
Which equation could be the other equation of this system?

A $3y = {}^{-}36x + 5$

B $24x + 2y = 18$

C $y = 3x$

D $x = \frac{3}{4}y$

Released Item Performance

Kentucky Summative Assessments

Spring 2025
Grade 8
Mathematics

Item: MA0820019*
Book Question Number: 3

Standard: KY.8.EE.8.b

Item Type: MC
Key: A

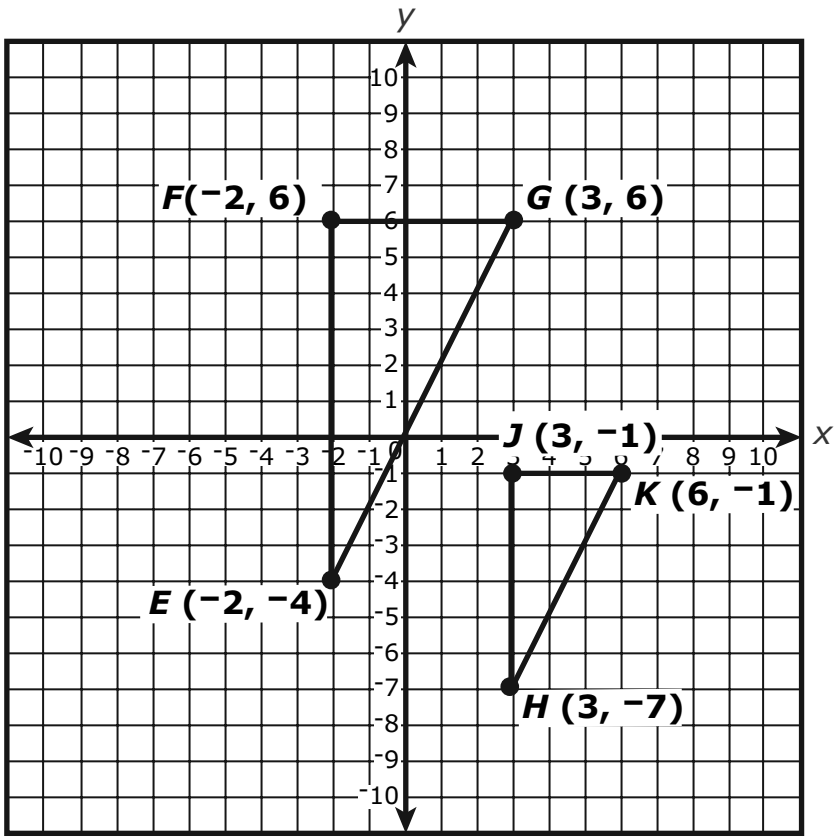
Student Group	Number of Students	Percent Correct	Average Item Score	Item Breakout Statistics - Answer Choice Options			
				A (%)	B (%)	C (%)	D (%)
All Students	**25,002**	21%	0.21	21%	51%	19%	10%
Gender							
Female	**11,923**	21%	0.21	21%	49%	20%	10%
Male	**13,079**	21%	0.21	21%	52%	19%	9%
Ethnicity							
African American	**2,856**	19%	0.19	19%	50%	22%	9%
American Indian or Alaska Native	**30**	17%	0.17	17%	53%	20%	10%
Asian	**524**	30%	0.30	30%	47%	14%	10%
Hispanic or Latino	**2,808**	18%	0.18	18%	51%	21%	9%
Native Hawaiian or Pacific Islander	**58**	19%	0.19	19%	43%	22%	16%
White (non-Hispanic)	**17,496**	21%	0.21	21%	51%	19%	10%
Two or more races	**1,229**	20%	0.20	20%	52%	20%	8%
Migrant	**165**	19%	0.19	19%	55%	18%	8%
English Learner	**1,963**	16%	0.16	16%	52%	23%	9%
Economically Disadvantaged	**15,140**	19%	0.19	19%	50%	21%	9%
Students with Disabilities	**4,216**	19%	0.19	19%	51%	22%	9%

* Calculator section

4

MA0820024_3

Triangles *EFG* and *HJK* are graphed on a coordinate plane, as shown.



Which equation can be used to represent the line that contains $\overline{HK}$?

A $y = 2x - 7$

B $y = \frac{1}{2}x - 7$

C $y = 2x - 13$

D $y = \frac{1}{2}x - 13$

Released Item Performance

Kentucky Summative Assessments

Spring 2025
Grade 8
Mathematics

Item: MA0820024*
Book Question Number: 4

Standard: KY.8.EE.6

Item Type: MC
Key: C

Student Group	Number of Students	Percent Correct	Average Item Score	Item Breakout Statistics - Answer Choice Options			
				A (%)	B (%)	C (%)	D (%)
All Students	**46,605**	29%	0.29	31%	31%	29%	8%
Gender							
Female	**22,598**	28%	0.28	32%	32%	28%	8%
Male	**24,006**	31%	0.31	30%	31%	31%	9%
Ethnicity							
African American	**5,068**	27%	0.27	28%	36%	27%	9%
American Indian or Alaska Native	**54**	26%	0.26	33%	31%	26%	9%
Asian	**987**	40%	0.40	30%	23%	40%	6%
Hispanic or Latino	**4,739**	27%	0.27	29%	34%	27%	9%
Native Hawaiian or Pacific Islander	**99**	19%	0.19	37%	34%	19%	9%
White (non-Hispanic)	**33,275**	30%	0.30	32%	30%	30%	8%
Two or more races	**2,380**	29%	0.29	31%	33%	29%	7%
Migrant	**246**	26%	0.26	24%	39%	26%	12%
English Learner	**2,835**	27%	0.27	25%	37%	27%	11%
Economically Disadvantaged	**27,605**	28%	0.28	30%	34%	28%	9%
Students with Disabilities	**5,706**	31%	0.31	25%	33%	31%	11%

* Calculator section

5

MA0821082_4

Which situation can be modeled by a function that is **not** linear?

A The cost of apples as a function of their weight per pound

B The perimeter of an equilateral triangle as a function of its side length

C The value, in dollars, of a penny jar as a function of the number of pennies in the jar

D The height of a ball after it is kicked into the air until it hits the ground as a function of time

Released Item Performance

Kentucky Summative Assessments

Spring 2025
Grade 8
Mathematics

Item: MA0821082*
Book Question Number: 5

Standard: KY.8.F.3.b

Item Type: MC
Key: D

Student Group	Number of Students	Percent Correct	Average Item Score	Item Breakout Statistics - Answer Choice Options			
				A (%)	B (%)	C (%)	D (%)
All Students	**46,603**	37%	0.37	13%	25%	25%	37%
Gender							
Female	**22,597**	38%	0.38	13%	25%	25%	38%
Male	**24,005**	37%	0.37	14%	25%	25%	37%
Ethnicity							
African American	**5,066**	31%	0.31	14%	26%	29%	31%
American Indian or Alaska Native	**54**	41%	0.41	9%	19%	31%	41%
Asian	**987**	46%	0.46	11%	23%	20%	46%
Hispanic or Latino	**4,740**	34%	0.34	13%	26%	27%	34%
Native Hawaiian or Pacific Islander	**99**	46%	0.46	8%	25%	20%	46%
White (non-Hispanic)	**33,274**	38%	0.38	13%	24%	24%	38%
Two or more races	**2,380**	35%	0.35	13%	25%	27%	35%
Migrant	**246**	29%	0.29	14%	28%	29%	29%
English Learner	**2,836**	28%	0.28	14%	26%	32%	28%
Economically Disadvantaged	**27,604**	34%	0.34	14%	25%	27%	34%
Students with Disabilities	**5,705**	31%	0.31	14%	25%	29%	31%

* Calculator section

6

MA0820195_1,5

Line segment PQ has endpoints $P(1, 1)$ and $Q(4, 2)$. Line segment PQ is rotated 90° counterclockwise around the origin to form $\overline{P'Q'}$. Which statements are true about $\overline{PQ}$ and $\overline{P'Q'}$?

Select **two** correct statements.

A $\overline{PQ} \cong \overline{P'Q'}$

B $\overline{PQ} \parallel \overline{P'Q'}$

C $\overline{P'Q'}$ is a vertical segment.

D $\overline{P'Q'}$ is a horizontal segment.

E $\overline{P'Q'}$ has an approximate length of 3.16 units.

Released Item Performance

Kentucky Summative Assessments

Spring 2025
Grade 8
Mathematics

Item: MA0820195*
Book Question Number: 6

Standard: KY.8.G.1

Item Type: MS
Key: A,E

Student Group	Number of Students	Percent Correct	Average Item Score	Item Breakout Statistics - Score Percentages		
				Score 0 (%)	Score 1 (%)	Score 2 (%)
All Students	**21,392**	40.1%	0.80	30%	59%	11%
Gender						
Female	**10,562**	39.5%	0.79	31%	59%	10%
Male	**10,829**	40.7%	0.81	30%	59%	11%
Ethnicity						
African American	**2,188**	36.7%	0.73	33%	60%	7%
American Indian or Alaska Native	**24**	33.3%	0.67	38%	58%	4%
Asian	**461**	47.8%	0.96	26%	53%	21%
Hispanic or Latino	**1,899**	37.4%	0.75	33%	59%	8%
Native Hawaiian or Pacific Islander	**40**	37.5%	0.75	33%	60%	8%
White (non-Hispanic)	**15,638**	40.8%	0.82	30%	59%	11%
Two or more races	**1,140**	40.1%	0.80	30%	59%	10%
Migrant	**80**	34.4%	0.69	34%	64%	3%
English Learner	**843**	36.7%	0.73	34%	58%	7%
Economically Disadvantaged	**12,323**	38.1%	0.76	32%	59%	8%
Students with Disabilities	**1,474**	40.2%	0.80	29%	61%	10%

* Calculator section

08052025 KYRELIT1-000000-0000122

MA0820066_stimulus

Frances used clay to make a model of the moon in the shape of a sphere. The circumference of the model is 18π centimeters.

Formulas_8_G_9

Figure	Volume	Surface Area
Cone	$V = \frac{1}{3}\pi r^2 h$	$SA = \pi r\left(r + \sqrt{(r^2 + h^2)}\right)$
Cylinder	$V = \pi r^2 h$	$SA = 2\pi rh + 2\pi r^2$
Sphere	$V = \frac{4}{3}\pi r^3$	$SA = 4\pi r^2$

7

MA0820066_2

What is the amount of clay, in cubic centimeters, Frances used to make the model?

A 324π

B 972π

C $1{,}296\pi$

D $2{,}916\pi$

Released Item Performance

Kentucky Summative Assessments

Spring 2025
Grade 8
Mathematics

Item: MA0820066*
Book Question Number: 7

Standard: KY.8.G.9

Item Type: MC
Key: B

Student Group	Number of Students	Percent Correct	Average Item Score	Item Breakout Statistics - Answer Choice Options			
				A (%)	B (%)	C (%)	D (%)
All Students	**14,281**	36%	0.36	22%	36%	30%	12%
Gender							
Female	**6,623**	35%	0.35	23%	35%	29%	12%
Male	**7,658**	37%	0.37	21%	37%	30%	13%
Ethnicity							
African American	**1,679**	32%	0.32	25%	32%	30%	12%
American Indian or Alaska Native	**16**	25%	0.25	19%	25%	44%	13%
Asian	**297**	42%	0.42	25%	42%	26%	7%
Hispanic or Latino	**1,811**	35%	0.35	23%	35%	31%	11%
Native Hawaiian or Pacific Islander	**30**	27%	0.27	23%	27%	37%	13%
White (non-Hispanic)	**9,739**	37%	0.37	21%	37%	29%	13%
Two or more races	**708**	34%	0.34	24%	34%	30%	13%
Migrant	**113**	36%	0.36	22%	36%	29%	12%
English Learner	**1,520**	33%	0.33	26%	33%	30%	11%
Economically Disadvantaged	**8,960**	34%	0.34	23%	34%	30%	13%
Students with Disabilities	**3,450**	33%	0.33	23%	33%	31%	14%

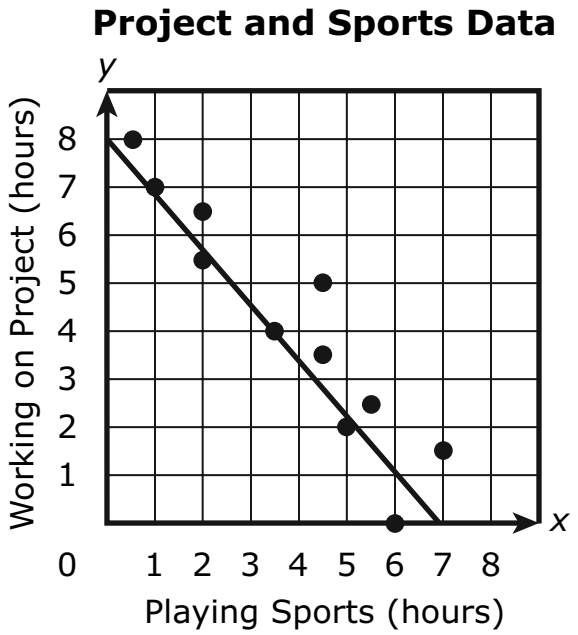
* Calculator section

08052025 KYRELIT1-000000-0000121

8

MA0821156_1

A student records the number of hours his friends spent working on their class project and the number of hours they spent playing sports. The student drew the line shown to model this relationship.



Which statement describes a way the student could improve the linear model to better represent the relationship?

A Change the line so that it passes through the point that represents 0 hours spent working on the project when playing 8 hours of sports.

B Change the line so that it passes through the point that represents 7 hours spent working on the project when playing 0 hours of sports.

C Change the line so that it passes through the point that represents 9 hours spent working on the project when playing 0 hours of sports.

D Change the line so that it passes through the point that represents 0 hours spent working on the project when playing 6 hours of sports.

Released Item Performance

Kentucky Summative Assessments

Spring 2025
Grade 8
Mathematics

Item: MA0821156*
Book Question Number: 8

Standard: KY.8.SP.2

Item Type: MC
Key: A

Student Group	Number of Students	Percent Correct	Average Item Score	Item Breakout Statistics - Answer Choice Options			
				A (%)	B (%)	C (%)	D (%)
All Students	**10,707**	30%	0.30	30%	24%	24%	22%
Gender							
Female	**5,342**	30%	0.30	30%	23%	24%	23%
Male	**5,364**	29%	0.29	29%	25%	25%	20%
Ethnicity							
African American	**1,079**	25%	0.25	25%	31%	24%	20%
American Indian or Alaska Native	**14**	7%	0.07	7%	21%	36%	36%
Asian	**235**	35%	0.35	35%	20%	24%	20%
Hispanic or Latino	**1,009**	27%	0.27	27%	27%	23%	23%
Native Hawaiian or Pacific Islander	**19**	11%	0.11	11%	32%	37%	21%
White (non-Hispanic)	**7,784**	31%	0.31	31%	23%	25%	22%
Two or more races	**565**	32%	0.32	32%	24%	24%	20%
Migrant	**37**	22%	0.22	22%	35%	14%	30%
English Learner	**453**	25%	0.25	25%	33%	21%	21%
Economically Disadvantaged	**6,131**	27%	0.27	27%	27%	25%	21%
Students with Disabilities	**743**	24%	0.24	24%	34%	24%	18%

* Calculator section

Investing in Kentucky's Future, One Student at a Time