Kentucky Summative Assessments

Grade 10 Mathematics
Released Items
2025

1

MA1019075_1

Factor: $x^2 - 8x + 15$

A $(x - 3)(x - 5)$

B $(x + 3)(x - 5)$

C $(x - 3)(x + 5)$

D $(x + 3)(x + 5)$

Released Item Performance

Kentucky Summative Assessments

Spring 2025
Grade 10
Mathematics

Item: MA1019075
Book Question Number: 1

Standard: KY.HS.A.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	**22,651**	36%	0.36	36%	20%	33%	10%
Gender							
Female	**11,253**	36%	0.36	36%	21%	34%	10%
Male	**11,398**	37%	0.37	37%	20%	32%	11%
Ethnicity							
African American	**2,449**	25%	0.25	25%	25%	38%	12%
American Indian or Alaska Native	**30**	37%	0.37	37%	23%	27%	13%
Asian	**445**	65%	0.65	65%	11%	19%	5%
Hispanic or Latino	**2,174**	31%	0.31	31%	22%	36%	11%
Native Hawaiian or Pacific Islander	**42**	29%	0.29	29%	31%	40%	0%
White (non-Hispanic)	**16,430**	38%	0.38	38%	20%	32%	10%
Two or more races	**1,081**	32%	0.32	32%	22%	36%	10%
Migrant	**74**	18%	0.18	18%	31%	42%	9%
English Learner	**1,065**	22%	0.22	22%	28%	37%	13%
Economically Disadvantaged	**12,587**	29%	0.29	29%	23%	37%	12%
Students with Disabilities	**1,285**	19%	0.19	19%	28%	38%	15%

2

MA1019131_1

Which equation reveals the zeros of the function $f(x) = x^2 - 5x - 24$?

A $(x - 8)(x + 3) = 0$

B $(x + 8)(x - 3) = 0$

C $(x - 6)(x + 4) = 0$

D $(x + 6)(x - 4) = 0$

Released Item Performance

Kentucky Summative Assessments

Spring 2025
Grade 10
Mathematics

Item: MA1019131
Book Question Number: 2

Standard: KY.HS.A.3.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	**14,547**	31%	0.31	31%	28%	28%	12%
Gender							
Female	**6,809**	32%	0.32	32%	27%	29%	12%
Male	**7,737**	31%	0.31	31%	29%	28%	12%
Ethnicity							
African American	**1,706**	25%	0.25	25%	30%	33%	12%
American Indian or Alaska Native	**23**	39%	0.39	39%	17%	22%	22%
Asian	**293**	55%	0.55	55%	23%	16%	6%
Hispanic or Latino	**1,620**	27%	0.27	27%	31%	28%	14%
Native Hawaiian or Pacific Islander	**21**	29%	0.29	29%	24%	38%	10%
White (non-Hispanic)	**10,171**	32%	0.32	32%	28%	28%	12%
Two or more races	**712**	30%	0.30	30%	26%	30%	14%
Migrant	**129**	28%	0.28	28%	30%	26%	16%
English Learner	**1,161**	23%	0.23	23%	32%	30%	14%
Economically Disadvantaged	**8,704**	27%	0.27	27%	30%	30%	13%
Students with Disabilities	**3,336**	22%	0.22	22%	32%	32%	15%

3

MA1019023_1

Which value is equivalent to $3\sqrt{2}$?

A $\sqrt{18}$

B $\sqrt{12}$

C $\sqrt{9}$

D $\sqrt{6}$

Released Item Performance

Kentucky Summative Assessments

Spring 2025
Grade 10
Mathematics

Item: MA1019023
Book Question Number: 3

Standard: KY.HS.N.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	**25,871**	20%	0.20	20%	17%	19%	44%
Gender							
Female	**12,440**	19%	0.19	19%	16%	19%	46%
Male	**13,430**	20%	0.20	20%	17%	20%	43%
Ethnicity							
African American	**2,944**	14%	0.14	14%	17%	21%	48%
American Indian or Alaska Native	**43**	30%	0.30	30%	12%	21%	37%
Asian	**496**	46%	0.46	46%	9%	12%	33%
Hispanic or Latino	**2,721**	15%	0.15	15%	18%	19%	48%
Native Hawaiian or Pacific Islander	**40**	30%	0.30	30%	20%	10%	40%
White (non-Hispanic)	**18,338**	21%	0.21	21%	17%	19%	43%
Two or more races	**1,288**	19%	0.19	19%	16%	20%	45%
Migrant	**174**	8%	0.08	8%	13%	20%	59%
English Learner	**1,655**	11%	0.11	11%	18%	17%	54%
Economically Disadvantaged	**14,973**	15%	0.15	15%	17%	20%	48%
Students with Disabilities	**3,913**	19%	0.19	19%	19%	18%	44%

4

MA1020030_3

The first 3 terms of a geometric sequence with a domain of $x = 1, 2, 3, \ldots$ are shown.

$$4, {}^{-}8, 16, \ldots$$

Write a function, $f(x)$, that represent a rule for the terms of the sequence.

A $f(x) = 1(4)^{n-1}$

B $f(x) = 4(2)^{n-1}$

C $f(x) = 4({}^{-}2)^{n-1}$

D $f(x) = n({}^{-}4)^{n-1}$

Released Item Performance

Kentucky Summative Assessments

Spring 2025
Grade 10
Mathematics

Item: MA1020030
Book Question Number: 4

Standard: KY.HS.F.2

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	**22,656**	47%	0.47	14%	30%	47%	10%
Gender							
Female	**11,257**	47%	0.47	13%	30%	47%	10%
Male	**11,399**	47%	0.47	15%	29%	47%	9%
Ethnicity							
African American	**2,451**	43%	0.43	14%	35%	43%	8%
American Indian or Alaska Native	**30**	67%	0.67	17%	10%	67%	7%
Asian	**445**	60%	0.60	11%	19%	60%	9%
Hispanic or Latino	**2,173**	42%	0.42	15%	33%	42%	10%
Native Hawaiian or Pacific Islander	**42**	45%	0.45	12%	36%	45%	7%
White (non-Hispanic)	**16,433**	48%	0.48	14%	29%	48%	10%
Two or more races	**1,082**	46%	0.46	14%	31%	46%	9%
Migrant	**74**	30%	0.30	12%	46%	30%	12%
English Learner	**1,065**	32%	0.32	18%	38%	32%	11%
Economically Disadvantaged	**12,591**	43%	0.43	15%	33%	43%	10%
Students with Disabilities	**1,285**	36%	0.36	18%	37%	36%	9%

5

MA1020116_1,3

Which systems of equations has a solution of (2, 5)?

Select **two** correct answers.

A $y = 1.5x + 2$
$y = x^2 - 4x + 9$

B $2.5x + 1.25y = 0$
$x + 4y = 4$

C $2x + 3y = 19$
$4x - 2y = ^-2$

D $x + 4y = 22$
$x - 4y = 18$

E $y = x^2 - 25$
$y = x - 5$

Released Item Performance

Kentucky Summative Assessments

Spring 2025
Grade 10
Mathematics

Item: MA1020116*
Book Question Number: 5

Standard: KY.HS.A.23

Item Type: MS
Key: A,C

Student Group	Number of Students	Percent Correct	Average Item Score	Item Breakout Statistics - Score Percentages		
				Score 0 (%)	Score 1 (%)	Score 2 (%)
All Students	**11,136**	54.4%	1.09	22%	47%	31%
Gender						
Female	**5,564**	54.2%	1.08	22%	48%	30%
Male	**5,572**	54.6%	1.09	22%	47%	31%
Ethnicity						
African American	**1,148**	46.6%	0.93	29%	49%	22%
American Indian or Alaska Native	**15**	56.7%	1.13	20%	47%	33%
Asian	**223**	68.6%	1.37	12%	39%	49%
Hispanic or Latino	**1,008**	51.6%	1.03	25%	47%	28%
Native Hawaiian or Pacific Islander	**26**	57.7%	1.15	15%	54%	31%
White (non-Hispanic)	**8,165**	55.4%	1.11	21%	47%	32%
Two or more races	**551**	54.5%	1.09	21%	50%	30%
Migrant	**30**	46.7%	0.93	30%	47%	23%
English Learner	**462**	45.5%	0.91	28%	53%	19%
Economically Disadvantaged	**6,157**	51.6%	1.03	24%	50%	27%
Students with Disabilities	**608**	48.5%	0.97	25%	52%	22%

* Calculator section

6

MA1019122_1

Tony measures the amount of a substance that remains at the end of each hour of an experiment. The amount of the substance that remains at the end of each hour is $\frac{2}{3}$ the amount that remains at the end of the previous hour. The experiment begins at 1:00 P.M. with 24 grams of the substance. Approximately how many grams of the substance remains at 7:00 P.M.?

A 2.11
B 1.40
C 0.10
D 0.03

Released Item Performance

Kentucky Summative Assessments

Spring 2025
Grade 10
Mathematics

Item: MA1019122*
Book Question Number: 6

Standard: KY.HS.F.11.c

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	**14,532**	38%	0.38	38%	39%	15%	8%
Gender							
Female	**6,804**	38%	0.38	38%	38%	16%	8%
Male	**7,727**	38%	0.38	38%	40%	15%	8%
Ethnicity							
African American	**1,701**	31%	0.31	31%	42%	18%	10%
American Indian or Alaska Native	**23**	35%	0.35	35%	22%	17%	26%
Asian	**293**	52%	0.52	52%	32%	12%	4%
Hispanic or Latino	**1,620**	35%	0.35	35%	42%	15%	7%
Native Hawaiian or Pacific Islander	**21**	38%	0.38	38%	24%	29%	10%
White (non-Hispanic)	**10,162**	40%	0.40	40%	38%	15%	8%
Two or more races	**711**	36%	0.36	36%	40%	17%	8%
Migrant	**129**	38%	0.38	38%	43%	13%	6%
English Learner	**1,161**	33%	0.33	33%	44%	15%	8%
Economically Disadvantaged	**8,695**	34%	0.34	34%	41%	16%	8%
Students with Disabilities	**3,329**	31%	0.31	31%	43%	17%	9%

* Calculator section

MA1019060_stimulus

A glass sphere is stored in a cube-shaped box. The diameter of the sphere is 6 inches.

Formula_HS_G_25_27_29_30_31

Figure	Formula
Circle	$A = \pi r^2$
Circle	$C = \pi d$ or $C = 2\pi r$
General Prism	$V = Bh$
Right Circular Cylinder	$V = \pi r^2 h$
Pyramid	$V = \frac{1}{3}Bh$
Right Circular Cone	$V = \frac{1}{3}\pi r^2 h$
Sphere	$V = \frac{4}{3}\pi r^3$

7

MA1019060_1

If the sphere fits tightly inside the box, approximately how many cubic inches of space inside the box are **not** filled by the sphere?

A 102.90

B 354.67

C 565.49

D 791.68

Released Item Performance

Kentucky Summative Assessments

Spring 2025
Grade 10
Mathematics

Item: MA1019060*
Book Question Number: 7

Standard: KY.HS.G.25.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	**11,299**	42%	0.42	42%	33%	19%	6%
Gender							
Female	**5,648**	40%	0.40	40%	34%	20%	6%
Male	**5,651**	43%	0.43	43%	33%	19%	6%
Ethnicity							
African American	**1,180**	29%	0.29	29%	38%	26%	8%
American Indian or Alaska Native	**15**	47%	0.47	47%	13%	27%	13%
Asian	**226**	54%	0.54	54%	30%	13%	3%
Hispanic or Latino	**1,049**	36%	0.36	36%	35%	24%	5%
Native Hawaiian or Pacific Islander	**26**	35%	0.35	35%	42%	8%	15%
White (non-Hispanic)	**8,245**	44%	0.44	44%	32%	18%	6%
Two or more races	**558**	40%	0.40	40%	32%	22%	6%
Migrant	**34**	26%	0.26	26%	38%	26%	9%
English Learner	**505**	25%	0.25	25%	38%	29%	9%
Economically Disadvantaged	**6,277**	36%	0.36	36%	35%	22%	7%
Students with Disabilities	**616**	31%	0.31	31%	32%	27%	11%

* Calculator section

8

MA1019099_4

Which equation describes a line that is perpendicular to $y = 4x - 3$?

A $y = 4x + 5$

B $y = {}^{-}4x + 5$

C $y = \frac{1}{4}x + 5$

D $y = {}^{-}\frac{1}{4}x + 5$

STOP

Released Item Performance

Kentucky Summative Assessments

Spring 2025
Grade 10
Mathematics

Item: MA1019099*
Book Question Number: 8

Standard: KY.HS.G.1.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	**11,314**	30%	0.30	20%	29%	20%	30%
Gender							
Female	**5,649**	31%	0.31	20%	29%	20%	31%
Male	**5,665**	29%	0.29	21%	30%	20%	29%
Ethnicity							
African American	**1,180**	20%	0.20	22%	32%	26%	20%
American Indian or Alaska Native	**15**	27%	0.27	20%	47%	7%	27%
Asian	**226**	59%	0.59	12%	18%	11%	59%
Hispanic or Latino	**1,051**	23%	0.23	24%	30%	23%	23%
Native Hawaiian or Pacific Islander	**26**	8%	0.08	38%	31%	23%	8%
White (non-Hispanic)	**8,257**	32%	0.32	20%	29%	19%	32%
Two or more races	**559**	29%	0.29	17%	31%	23%	29%
Migrant	**34**	15%	0.15	18%	26%	41%	15%
English Learner	**505**	15%	0.15	30%	29%	26%	15%
Economically Disadvantaged	**6,287**	24%	0.24	22%	31%	23%	24%
Students with Disabilities	**618**	17%	0.17	30%	28%	25%	17%

* Calculator section

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