Kentucky Summative Assessments

Kentucky Department of
Education

Our
Children,

Our
Commonwealth

Grade 7 Mathematics
Released Items
2025

1

MA0720043_4

Paul builds furniture and charges customers based on the total number of hours it takes for him to build a piece of furniture. Paul charges $24.50 each hour. He calculates the number of hours shown for one customer's order.

- Monday: $2\frac{3}{4}$ hours

- Tuesday: 1 hour 18 minutes

- Wednesday, Thursday, Friday: 87 minutes each day

Which expression provides a reasonable estimate of the amount, in dollars, that Paul should charge the customer?

A $20(3 + \frac{24}{6})$

B $20(4 + \frac{27}{6})$

C $25(3 + \frac{24}{6})$

D $25(4 + \frac{27}{6})$

GO ON▶

Item: MA0720043

Book Question Number: 1

Standard: KY.7.EE.3

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	**10,024**	25%	0.25	18%	26%	31%	25%
Gender							
Female	**5,002**	24%	0.24	17%	27%	32%	24%
Male	**5,022**	25%	0.25	18%	26%	31%	25%
Ethnicity							
African American	**970**	16%	0.16	20%	35%	29%	16%
American Indian or Alaska Native	**<10**	****	****	****	****	****	****
Asian	**238**	32%	0.32	15%	24%	29%	32%
Hispanic or Latino	**910**	19%	0.19	21%	31%	29%	19%
Native Hawaiian or Pacific Islander	**15**	7%	0.07	20%	47%	27%	7%
White (non-Hispanic)	**7,321**	26%	0.26	17%	25%	32%	26%
Two or more races	**561**	25%	0.25	19%	25%	31%	25%
Migrant	**37**	14%	0.14	27%	35%	24%	14%
English Learner	**411**	12%	0.12	23%	35%	29%	12%
Economically Disadvantaged	**5,896**	21%	0.21	20%	29%	31%	21%
Students with Disabilities	**735**	21%	0.21	24%	30%	25%	21%

**** In order to protect student identification required by the Family Educational Rights and Privacy ACT (FERPA) and to avoid misrepresentation of results due to limited number of students, performance results are suppressed for groups with fewer than 10 students.

2

MA0720135_4

Beth and Mike each worked for 10 hours. Beth earned $2.50 more per hour than the amount, m, Mike earned per hour. The expression $20m + 25$ can be used to represent the total amount, in dollars, Beth and Mike earned. Which expression can also be used to represent the total amount, in dollars, that Beth and Mike earned?

A $10(m + 25)$

B $10(m + 2.5m)$

C $10(2m) + 2.5m$

D $10m + 10(m + 2.5)$

GO ON▶

Item: MA0720135

Book Question Number: 2

Standard: KY.7.EE.2

Item Type: MC

Key: D

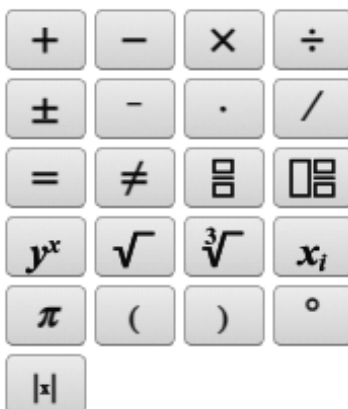| Student Group	Number of Students	Percent Correct	Average Item Score	Item Breakout Statistics - Answer Choice Options			
				A (%)	B (%)	C (%)	D (%)
All Students	**13,624**	27%	0.27	22%	26%	25%	27%
Gender							
Female	**6,365**	26%	0.26	22%	26%	25%	26%
Male	**7,259**	28%	0.28	21%	26%	25%	28%
Ethnicity							
African American	**1,535**	23%	0.23	24%	27%	26%	23%
American Indian or Alaska Native	**21**	29%	0.29	19%	38%	14%	29%
Asian	**315**	37%	0.37	17%	26%	19%	37%
Hispanic or Latino	**1,658**	23%	0.23	23%	27%	26%	23%
Native Hawaiian or Pacific Islander	**33**	39%	0.39	18%	24%	18%	39%
White (non-Hispanic)	**9,343**	28%	0.28	21%	26%	25%	28%
Two or more races	**719**	25%	0.25	22%	27%	25%	25%
Migrant	**112**	23%	0.23	22%	30%	24%	23%
English Learner	**1,440**	21%	0.21	27%	25%	27%	21%
Economically Disadvantaged	**8,551**	24%	0.24	23%	27%	26%	24%
Students with Disabilities	**3,467**	22%	0.22	25%	25%	28%	22%

3

MA0720109

Lisa weaves black thread and white thread to make a gray cloth. To make the shade of gray she wants, 35% of her total thread used must be black. Lisa will use 105 yards of black thread to make the cloth.

- How many yards of white thread does Lisa need in order to weave the shade of gray that she wants?
- Show or explain how you determined your answer.

Enter your answer and your work or explanation in the space provided.

Math symbols

+	−	×	÷
±	-	·	/
=	≠	▯/▯	▯▯
y^x	√	$\sqrt[3]{}$	x_i
π	(	)	°
	x	

▶ Relations

GO ON▶

Item: MA0720109
Book Question Number: 3

Standard: KY.7.RP.3.a

Item Type: SA
Key: Rubric

Student Group	Number of Students	Percent Correct	Average Item Score	Item Breakout Statistics - Score Percentages		
				Score 0 (%)	Score 1 (%)	Score 2 (%)
All Students	**13,346**	11.2%	0.22	85%	7%	8%
Gender						
Female	**6,260**	10.8%	0.22	86%	6%	8%
Male	**7,086**	11.7%	0.23	85%	7%	8%
Ethnicity						
African American	**1,487**	3.9%	0.08	95%	3%	2%
American Indian or Alaska Native	**21**	16.7%	0.33	81%	5%	14%
Asian	**312**	23.6%	0.47	71%	11%	18%
Hispanic or Latino	**1,609**	6.9%	0.14	91%	5%	4%
Native Hawaiian or Pacific Islander	**30**	5.0%	0.10	93%	3%	3%
White (non-Hispanic)	**9,185**	12.7%	0.25	84%	7%	9%
Two or more races	**702**	11.8%	0.24	84%	8%	8%
Migrant	**109**	5.0%	0.10	94%	1%	5%
English Learner	**1,394**	2.6%	0.05	96%	2%	1%
Economically Disadvantaged	**8,339**	7.4%	0.15	90%	5%	5%
Students with Disabilities	**3,372**	3.7%	0.07	95%	3%	2%

Rubric

Rubric	
Score Point 2	Student demonstrates a **complete understanding** of a percent of a quantity as a rate per 100.
Score Point 1	Student demonstrates a partial understanding of a percent of a quantity as a rate per 100.
Score Point 0	Student response is completely incorrect or irrelevant.
Blank	No student response.
Score Points	- Score 2 points: - Correct answer with complete work shown or explanation provided. - Score 1 point: - Correct answer with no work shown or explanation provided. **OR** - An explanation that shows a partial understanding of percents leading to a reasonable incorrect answer.
Correct Answers	First, I need to find the total amount of thread that is needed to make the cloth. $\frac{35}{100} = \frac{105}{x}$ Next, I subtract 105 from 300 to find the number of yards of white thread Lisa needs. 195 yards

Anchor Set

$100 - 35 = 65$
I Subtracted 35 from 100 in order to get how many yards of white thread she needs for the shade of gray she wants.
Lisa will need 65 Yards of thread in order to get the shade of gray she wants.

Anchor Annotation, Paper 1
Score Point 0

This response receives no credit. It includes neither of the required elements.

The response determines the percentage of white thread ($100 - 35 = 65$) and this number is misinterpreted as the length of white thread in yards (65 yards).

To find the answer I will use the "fish method" or cross multiplying. First, I will put the 35percent over 100 because it's a percent. Then, I'll put the 105 yards on the other denominator on the other side of the portportion. Finally, I'll multiply 105 by 35 to get 3675 then I'll divide by 100. The final answer would be 37percent.
$\frac{35}{100} = \frac{}{105}$ $105 \times 35 = 3675$
$3675 \div 100 = 36.75$ rounded to the hundreth to get my answer

Anchor Annotation, Paper 2
Score Point 0

This response receives no credit. It includes neither of the required elements.

The response shows an incorrect use of a proportion to determine the percentage. While the left side of the proportion is correct ($\frac{35}{100}$), the right side should have the 105 in the numerator, to correspond with 35%, and the unknown quantity in the denominator, to correspond with 100%.

> If 105 yards of black thread is 35% of her total number of yards of thread, then 100% of her thread would be 400. And $400 - 105 = 295$.
> So, Lisa needs 295 yards of white thread to get the shade of gray she wants.

Anchor Annotation, Paper 3
Score Point 0

This response receives no credit. It includes neither of the required elements.

An incorrect answer is provided (295 yards).

No work is shown for determining the total yards of thread (If 105 yards of black thread is 35% of her total...then 100% of her thread would be 400). The subtraction is correct ($400 - 105 = 295$), but just subtraction is not sufficient for credit. The incorrect subtraction is based on an incorrect value of 400 total yards of thread.

> She will need to use 295 yards of white thread. I knew that 105 yards was 35% of her total thread, so I needed to figure out what the total was. So I cross multiplied 105 too 100 and 35 to "x". Then I divided 35 by 10500 and got 300. Finally, I subtracted 105 from 300 to get 295.

Anchor Annotation, Paper 4
Score Point 1

This response receives partial credit. It includes one of the two required elements.

Correct work is shown for using a proportion to determine the total yards (cross multiplied 105 too 100 and 35 to "x". Then I divided 35 by 10500 and got 300).

A subtraction error in the final step of solving for the amount of white thread leads to the incorrect answer (I subtracted 105 from 300 to get 295).

well it has to eqaul 100% so 100% − 35% = 65% so if 35% is 105 yards of thread then 65% is eqaul to 195 yards of thread.

Anchor Annotation, Paper 5
Score Point 1

This response receives partial credit. It includes one of the two required elements.

The correct answer is given (195 yards).

Partial work is shown (100% − 35% = 65% so if 35% is 105 yards of thread then 65% is eqaul to 195 yards of thread). It does not demonstrate how to determine that 65% is equal to 195 yards.

Lisa would need 300 yards of white thread in order to make the color gray she wants. I found my answer by setting up the equation $\frac{35}{100} = \frac{105}{x}$ I then multiplied 100 and 105 to get 10500 which I then divided by 35 to get 300.

Anchor Annotation, Paper 6
Score Point 1

This response receives partial credit. It includes an explanation that shows a partial understanding of percents leading to a reasonable incorrect answer.

Correct work is described to find the total amount of thread ($\frac{35}{100} = \frac{105}{x}$ I then multiplied 100 and 105 to get 10500 which I then divided by 35 to get 300).

The work is not complete to calculate the 195 yards of white thread needed from the 300 yards of total thread.

> Lisa needs around 195 yards of thread in order to make the gray color that she wants. I know this because 35 percent of the thread is black and that 35 percent is equal to 105 so we have to figure out what the other 65 percent is equal to. So what I did was divide the 105 by 35 giving me 1 percent and then I multiplied it by 100 giving me the total of 300 yards and then took away 105 leaving me with the amount of white thread.

Anchor Annotation, Paper 7
Score Point 2

This response receives full credit. It includes both of the required elements.

The correct answer is given (195 yards).

A complete explanation is provided (divide the 105 by 35 giving me 1 percent and then I multiplied it by 100 giving me the total of 300 yards and then took away 105 leaving me with the amount of white thread).

> Lisa needs 195 yards of white thread.
>
> The first thing I did to solve this problem was set up the proportion, $\frac{35}{100} = \frac{105}{x}$, which simplifies to 35x = 10500. After that I solved for x and that is 300. So 300 yards is the total amount so I did 300 − 105 and that equals 195. So Lisa will need 195 yards of white thread.

Anchor Annotation, Paper 8
Score Point 2

This response receives full credit. It includes both of the required elements.

The correct answer is given (195 yards).

Correct and complete work is shown ($\frac{35}{100} = \frac{105}{x}$, which simplifies to $35x = 10500$...So 300 yards is the total amount so I did 300 – 105 and that equals 195).

195 yards is the amout of white thread Lisa needs in order to weave the shade of grey she wants. I know this because I put 105 yards of black on the top fraction which is equals to 35% of T. I then solved to find out what is T. I solved it by cross multipling. After I did that I learn that 300 is T. so 105 yards of black is %35 of 300 yards togethor. I then made another equation. I knew that if 35% is black than if I subtract 35% from 100% that will tell me the percentage the thread is white. 100% − 35% = 65%. So in the next equation I put 65% over 100% equals w over 300 total thread . After cross multipling i got 60.3 over 300 equals 65% of %100. This told me that 195 yards of white thread is need to make the shadde of grey for Lisa to make a cloth
.

Steps:

1. $\dfrac{35}{100} = \dfrac{105}{T}$

2. $105 \times 100 = 10500$

3. $10500 \div 35 = 300$

4. $\dfrac{35}{100} = \dfrac{105}{300}$

5. $100\% - 35\% = 65\%$

6. $\dfrac{65}{100} = \dfrac{w}{300}$

7. $300 \times 65 = 19500$

8. $19500 \div 100 = 195$

9. $\dfrac{65}{100} = \dfrac{195}{300}$

10. 195 yards of white thread

Anchor Annotation, Paper 9
Score Point 2

This response receives full credit. It includes both of the required elements.

The correct answer is given (195 yards).

Correct and complete work is shown ($\dfrac{35}{100} = \dfrac{105}{T}$; $105 \times 100 = 10500$; $10500 \div 35 = 300$; $100\% - 35\% = 65\%$; $\dfrac{65}{100} = \dfrac{w}{300}$; $300 \times 65 = 19500$; $19500 \div 100 = 195$). The verbal explanation is also correct and would have received credit.

4

MA0721143_4

A teacher records the number of books students in two classes read throughout the year. The teacher uses this information to plan the number of books to give students next year. The box plots show the data for the two classes.

Number of Books Read

Class A

Class B

```
   0   5  10 15 20 25 30 35 40 45 50 55 60 65 70
```
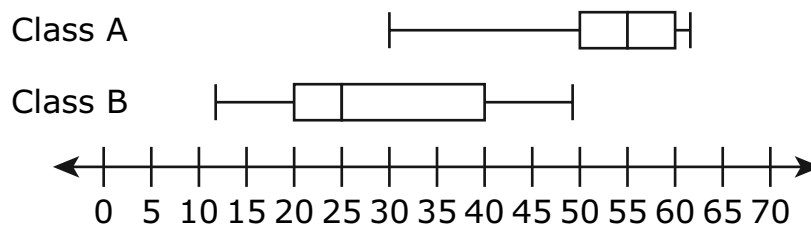
Based on visual inspection of the box plots, which class has the highest variability in the number of books read throughout the year and do the data prove your answer?

A Class A has the highest variability because the maximum value for Class A is greater than the maximum value for Class B.

B Class B has the highest variability because the minimum value for Class B is less than half of the minimum value of Class A.

C Class A has the highest variability because the median for Class A is more than two times as great as the median for Class B.

D Class B has the highest variability because the interquartile range for Class B is two times the interquartile range of Class A.

GO ON▶

Item: MA0721143

Book Question Number: 4

Standard: KY.7.SP.3

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	**30,026**	27%	0.27	29%	17%	27%	27%
Gender							
Female	**14,694**	25%	0.25	30%	17%	28%	25%
Male	**15,332**	29%	0.29	27%	18%	26%	29%
Ethnicity							
African American	**2,908**	19%	0.19	30%	23%	27%	19%
American Indian or Alaska Native	**29**	31%	0.31	28%	21%	21%	31%
Asian	**718**	40%	0.40	23%	11%	26%	40%
Hispanic or Latino	**2,667**	23%	0.23	30%	20%	27%	23%
Native Hawaiian or Pacific Islander	**54**	26%	0.26	26%	13%	35%	26%
White (non-Hispanic)	**22,027**	28%	0.28	28%	17%	27%	28%
Two or more races	**1,623**	25%	0.25	30%	18%	28%	25%
Migrant	**121**	18%	0.18	35%	19%	28%	18%
English Learner	**1,181**	17%	0.17	29%	26%	28%	17%
Economically Disadvantaged	**17,501**	23%	0.23	30%	20%	27%	23%
Students with Disabilities	**2,234**	21%	0.21	30%	25%	24%	21%

5

MA0720112_1

Lucas has $25.00 in his lunch account at school at the beginning of the month.

- The cost of lunch is $2.50 and the cost of ice cream is $0.75.
- During the month, he buys 18 lunches and 6 ice creams.
- During the month, he deposits another $20.00 in his account.

Which will give Lucas a balance of $0 in his lunch account at the end of the month?

A He should deposit $4.50 to his lunch account.

B He should deposit $21.00 to his lunch account.

C He should receive a $4.50 refund from his lunch account.

D He should receive a $21.00 refund from his lunch account.

GO ON▶

Item: MA0720112   **Standard:** KY.7.NS.1.a   **Item Type:** MC
Book Question Number: 5   **Key:** A

Student Group	Number of Students	Percent Correct	Average Item Score	Item Breakout Statistics - Answer Choice Options			
				A (%)	B (%)	C (%)	D (%)
All Students	10,118	45%	0.45	45%	26%	17%	11%
Gender							
Female	4,959	45%	0.45	45%	27%	17%	11%
Male	5,159	45%	0.45	45%	26%	17%	12%
Ethnicity							
African American	958	35%	0.35	35%	33%	17%	15%
American Indian or Alaska Native	<10	****	****	****	****	****	****
Asian	253	58%	0.58	58%	17%	17%	8%
Hispanic or Latino	865	41%	0.41	41%	28%	19%	13%
Native Hawaiian or Pacific Islander	24	38%	0.38	38%	33%	21%	8%
White (non-Hispanic)	7,456	46%	0.46	46%	26%	17%	11%
Two or more races	555	45%	0.45	45%	26%	18%	11%
Migrant	47	47%	0.47	47%	26%	21%	6%
English Learner	401	32%	0.32	32%	32%	22%	14%
Economically Disadvantaged	5,841	41%	0.41	41%	29%	18%	13%
Students with Disabilities	724	40%	0.40	40%	28%	19%	13%

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6

MA0720120_3

What is the value of the expression

$\left(\frac{1}{6}\right)(^-4.4)(^-0.6)\left(\frac{1}{2}\right)$?

A ⁻0.88

B ⁻0.22

C 0.22

D 0.88

GO ON▶

Item: MA0720120

Book Question Number: 6

Standard: KY.7.NS.2.c

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	**33,623**	34%	0.34	20%	26%	34%	19%
Gender							
Female	**16,059**	34%	0.34	19%	27%	34%	20%
Male	**17,564**	35%	0.35	20%	26%	35%	19%
Ethnicity							
African American	**3,473**	30%	0.30	21%	31%	30%	18%
American Indian or Alaska Native	**41**	27%	0.27	17%	34%	27%	22%
Asian	**795**	49%	0.49	15%	19%	49%	17%
Hispanic or Latino	**3,414**	30%	0.30	21%	31%	30%	19%
Native Hawaiian or Pacific Islander	**72**	44%	0.44	18%	31%	44%	7%
White (non-Hispanic)	**24,046**	35%	0.35	20%	25%	35%	20%
Two or more races	**1,782**	32%	0.32	21%	27%	32%	19%
Migrant	**196**	27%	0.27	17%	37%	27%	19%
English Learner	**2,208**	28%	0.28	22%	33%	28%	17%
Economically Disadvantaged	**20,154**	32%	0.32	21%	28%	32%	19%
Students with Disabilities	**4,963**	39%	0.39	19%	27%	39%	15%

7

MA0720010_4

The original price of a game is $16. On Monday, the price was reduced by 20%. On Wednesday, an additional 25% was taken off the reduced price. What was the final price, in dollars, of the game on Wednesday?

A 6.40

B 7.20

C 8.80

D 9.60

GO ON▶

Item: MA0720010*
Book Question Number: 7

Standard: KY.7.RP.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	**10,117**	32%	0.32	16%	26%	27%	32%
Gender							
Female	**4,958**	29%	0.29	17%	26%	28%	29%
Male	**5,159**	34%	0.34	14%	27%	25%	34%
Ethnicity							
African American	**958**	20%	0.20	22%	30%	28%	20%
American Indian or Alaska Native	**<10**	****	****	****	****	****	****
Asian	**253**	47%	0.47	10%	24%	19%	47%
Hispanic or Latino	**865**	24%	0.24	17%	29%	30%	24%
Native Hawaiian or Pacific Islander	**24**	21%	0.21	13%	25%	42%	21%
White (non-Hispanic)	**7,455**	34%	0.34	15%	25%	26%	34%
Two or more races	**555**	26%	0.26	18%	31%	26%	26%
Migrant	**47**	26%	0.26	19%	28%	28%	26%
English Learner	**402**	14%	0.14	26%	29%	31%	14%
Economically Disadvantaged	**5,839**	26%	0.26	18%	28%	27%	26%
Students with Disabilities	**724**	26%	0.26	22%	26%	26%	26%

* Calculator section
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MA0721139

8

A manager of a company set a goal of having less than 1% of the products produced to be defective. The manager uses random samples to test for defective products. The table shows the results of three different samples last month.

Survey Results

Sample	Defective Products	Number of Products Tested
Sample A	4	30
Sample B	6	100
Sample C	8	295

The company produced a total of 16,384 products last month. Which sample is the most valid for estimating the total number of defective products last month?

Select from the drop-down menus to correctly complete the statements.

The most valid sample is [Choose... ⌄]. Based on this sample, the number

of defective products last month is expected to be less than [Choose.. ⌄].

GO ON▶

Item Drop Down Options:

A manager of a company set a goal of having less than 1% of the products produced to be defective. The manager uses random samples to test for defective products. The table shows the results of three different samples last month.

Survey Results

Sample	Defective Products	Number of Products Tested
Sample A	4	30
Sample B	6	100
Sample C	8	295

The company produced a total of 16,384 products last month. Which sample is the most valid for estimating the total number of defective products last month?

Select from the drop-down menus to correctly complete the statements.

The most valid sample is | ✔ Choose... |. Based on this sample, the number

Sample A

of defective products last | Sample B | o be less than | ✔ Choose... |

Sample C

164

444

983

2,185

GO ON▶

Correct Answer:

A manager of a company set a goal of having less than 1% of the products produced to be defective. The manager uses random samples to test for defective products. The table shows the results of three different samples last month.

Survey Results

Sample	Defective Products	Number of Products Tested
Sample A	4	30
Sample B	6	100
Sample C	8	295

The company produced a total of 16,384 products last month. Which sample is the most valid for estimating the total number of defective products last month?

Select from the drop-down menus to correctly complete the statements.

The most valid sample is [Sample C ⌄] . Based on this sample, the number of defective products last month is expected to be less than [444 ⌄] .

STOP ■

Item: MA0721139*
Book Question Number: 8

Standard: KY.7.SP.2.b

Item Type: TE
Key: see below

Student Group	Number of Students	Percent Correct	Average Item Score	Item Breakout Statistics - Score Percentages	
				Score 0 (%)	Score 1 (%)
All Students	**10,025**	19.2%	0.19	81%	19%
Gender					
Female	**5,002**	17.9%	0.18	82%	18%
Male	**5,023**	20.6%	0.21	79%	21%
Ethnicity					
African American	**969**	13.9%	0.14	86%	14%
American Indian or Alaska Native	**<10**	****	****	****	****
Asian	**238**	27.3%	0.27	73%	27%
Hispanic or Latino	**911**	14.6%	0.15	85%	15%
Native Hawaiian or Pacific Islander	**15**	20.0%	0.20	80%	20%
White (non-Hispanic)	**7,322**	20.3%	0.20	80%	20%
Two or more races	**561**	18.5%	0.19	81%	19%
Migrant	**37**	8.1%	0.08	92%	8%
English Learner	**411**	11.9%	0.12	88%	12%
Economically Disadvantaged	**5,897**	16.3%	0.16	84%	16%
Students with Disabilities	**736**	15.4%	0.15	85%	15%

Key: Sample C,444

* Calculator section
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UNITED
WE
LEARN

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