



1992-93 KIRIS COMMON OPEN-RESPONSE ITEM SCORING WORKSHEET

Grade 8 – Mathematics Question 2

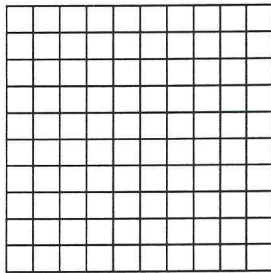
(Learner outcomes covered by this item include: Goal 2, number.)

The following was included in the general instructions given for both open response sections of the mathematics test.

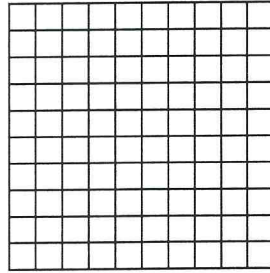
EXPLAIN YOUR ANSWERS THOROUGHLY. SHOW ALL YOUR WORK, COMPUTATIONS, CHARTS, GRAPHS, ETC. IN THE SPACE BELOW. YOU MAY USE A CALCULATOR ON THIS SECTION OF THE TEST.

2. Using the grids provided below, illustrate each number by shading the correct number of squares.

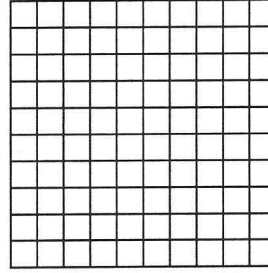
$$\frac{1}{4}$$



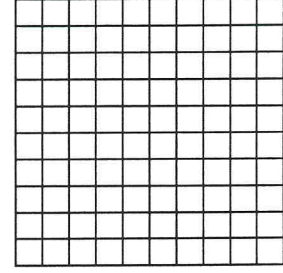
$$\overline{.33}$$



$$\frac{2}{5}$$



$$22\%$$



a. Explain how you decided the number of blocks to shade on each grid.

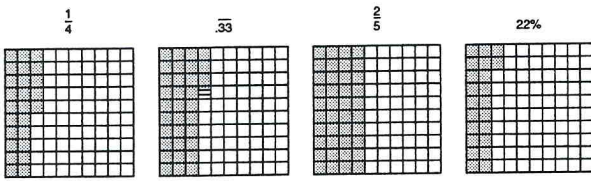
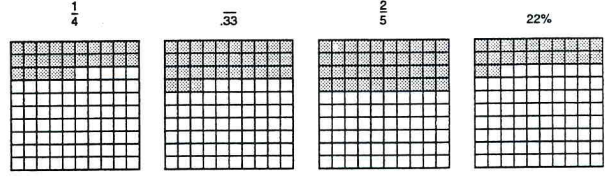
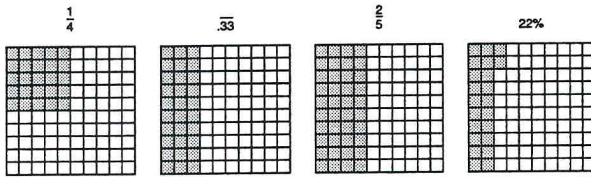
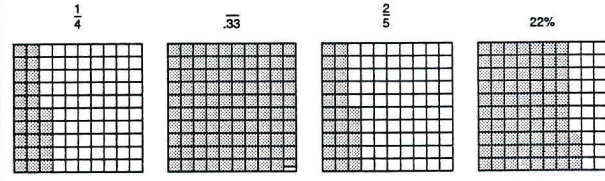
b. Order the numbers $\frac{1}{4}$, $\overline{.33}$, $\frac{2}{5}$, 22% from greatest to least.

OPEN-RESPONSE 2

SCORING GUIDE

4	Student shades correct number of squares in each of the grids to represent the given numbers ($1/4 = 25$ squares, $\overline{.33} = 33 \frac{1}{3}$ squares, $2/5 = 40$ squares and $22\% = 22$ squares) – complete solution strategy – numbers in correct order from greatest to least ($2/5, \overline{.33}, 1/4, 22\%$) *[student may use equivalent form]
3	Student correctly completes each of the three components – weak explanation or description OR student correctly completes each of the three components using $33/100$ for $\overline{.33}$
2	2 components correct OR student correctly completes each of the three components using $33/100$ for $\overline{.33}$ with weak explanation or description
1	1 component correct OR unsuccessful solution attempted
0	Blank

EXAMPLES OF STUDENT RESPONSE* FOR EACH SCORING GUIDE LEVEL

4		3																					
	<p>The number $1/4$ is equal to 25 blocks out of 100. The reason I knew this is because if you multiply both the numerator and denominator by 25 get you $25/100$ which I got for my answer. I knew that $\overline{.33}$ was equal to $33 \frac{1}{3}$ blocks out of 100 because $\overline{.33}$ means $.333333\dots$ out of 1 which is equal to $33.\overline{33}$ over 100. I knew that $\overline{.33}$ was equal to $1/3$ so I knew that it was equal to $33 \frac{1}{3} / 100$. I knew that $2/5$ was equal to 40 over 100 because if you multiply the top and bottom numbers by 20 you get $40/100$. I knew that 22% means 22 per 100 so I knew that it equals $22/100$.</p> <p style="text-align: center;">Order from greatest to least: $2/5, \overline{.33}, 1/4, 22\%$.</p>		<p>There are 100 blocks. $1/4$ or 25% of 100 is 25.</p> <p>There are 100 blocks. $1/3$ or 33% of 100 is 33.</p> <p>There are 100 blocks. $2/5$ or 40% of 100 is 40.</p> <p>There are 100 blocks. 22% or $11/50$ of 100 is 22.</p> <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="text-align: right; padding-right: 10px;">100</td> <td style="text-align: right; padding-right: 10px;">100</td> <td style="text-align: right; padding-right: 10px;">100</td> <td style="text-align: right;">100</td> </tr> <tr> <td style="text-align: right;">$\times 25$</td> <td style="text-align: right;">$\times 33$</td> <td style="text-align: right;">$\times 40$</td> <td style="text-align: right;">$\times 22$</td> </tr> <tr> <td style="text-align: right;">500</td> <td style="text-align: right;">3300</td> <td style="text-align: right;">4000</td> <td style="text-align: right;">200</td> </tr> <tr> <td style="text-align: right;">2000</td> <td></td> <td></td> <td style="text-align: right;">2000</td> </tr> <tr> <td style="text-align: right;">2500</td> <td></td> <td></td> <td style="text-align: right;">2200</td> </tr> </table> <p style="text-align: center;">$\frac{1}{4} = \frac{25}{100}$ $\frac{1}{3} = \frac{33}{100}$ $\frac{2}{5} = \frac{40}{100}$ $\frac{11}{50} = \frac{22}{100}$</p> <p style="text-align: center;">From greatest to least $2/5, \overline{.33}, 1/4, 22\%$</p>	100	100	100	100	$\times 25$	$\times 33$	$\times 40$	$\times 22$	500	3300	4000	200	2000			2000	2500			2200
100	100	100	100																				
$\times 25$	$\times 33$	$\times 40$	$\times 22$																				
500	3300	4000	200																				
2000			2000																				
2500			2200																				
2		1	<p>greatest to least = $\overline{.33}, 22\%, 1/4, 2/5$</p> 																				
	<p>a. $1/4$, I divided the blocks in half which is 5 both ways & colored it in. $\overline{.33}$ I colored in a third of the square, $2/5$ I colored I 4 rows and left 3 alone, 22% I colored 2 rows.</p> <p>B. $2/5, \overline{.33}, 1/4, 22\%$</p>		<p>$1/4 = 25$ blocks</p> <p>$.33 = 1 \times 0.333333$ by 3 and got 0.999999</p> <p>$2/5 =$ I guessed</p> <p>$22\% =$ I - 22% from 100</p> <p>$I \div 100$ sqs. by 4%</p>																				

* Wherever typed student responses appear, student errors have not been corrected.