

# MasterMath

7th Grade Quarter 2 Exam

Name \_\_\_\_\_

Date \_\_\_\_\_

Closed Book; 60 minutes to complete; show units; show work.

CUCC

## Conversions between Systems of Measure

When converting from Customary to Metric, use these approximations.

1 inch = 2.54 centimeters  
1 foot = 0.305 meter  
1 mile = 1.61 kilometers

1 cup = 0.24 liter  
1 gallon = 3.785 liters  
1 ounce = 28.35 grams  
1 pound = 0.454 kilogram

When converting from Metric to Customary, use these approximations.

1 centimeter = 0.39 inch  
1 meter = 3.28 feet  
1 kilometer = 0.62 mile

1 liter = 4.23 cups  
1 liter = 0.264 gallon  
1 gram = 0.0352 ounce  
1 kilogram = 2.204 pounds

- 721 1. Please convert these measures

Customary	Metric
8 pounds	3.63 kg
32.8 feet	10 meters
90.32 in	35.56 cm
6 gal.	22.71 liters
3 miles	4.83 km

- 721 2. Can you pour all the water from a 4 liter bottle into a 1 gallon bottle?

yes

- 722 3. Do x and y show Direct Variation?

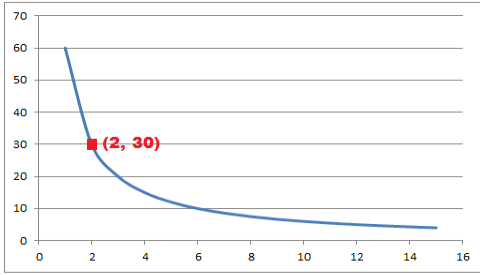
yes

x	y
3	9
2	6
8	24
16	48

- 722 4. Indicate whether these equations describe a Direct Variation. You may need to manipulate the equation to put it into standard format.

Equation	Direct Variation?
$10y = 4x$	yes
$y = 2x + 6$	no
$b = 3a$	yes
$.6n = 5m$	yes

723 5. This graph shows an Inverse Variation. Create an equation that relates y and x.



$y = 60/x$

723 6. Do x and y have a Direct Variation, or an Indirect Variation?

direct

<b>x</b>	<b>16</b>	<b>32</b>	<b>28</b>	<b>400</b>
<b>y</b>	<b>4</b>	<b>8</b>	<b>7</b>	<b>100</b>

723 7. Write an equation that describes this Inverse Variation

$y = x/45$

<b>x</b>	<b>45.0</b>	<b>22.5</b>	<b>15.0</b>	<b>11.25</b>
<b>y</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>

724 8. Please fill in the blanks. Round decimals to 3 decimal places. Round percentages to 1 decimal place. Simplify fractions.

%	Decimal	Fraction
45.8%	0.458	229/500
60.0%	0.600	3/5
57.6%	0.576	72/125
19.0%	0.190	19/100

724 9. You got 75% or the questions correct on the last math test. You got 36 questions correct. How many questions were on the math test?

48

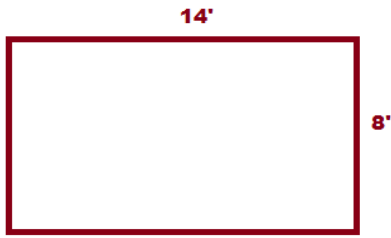
724 10. There was 6% sales tax added to your purchase price for the dress. With tax, you paid \$58.30 for the dress. What was the pre-tax price?

\$55.00

725 11. Determine the % Increase or Decrease. Round to one decimal place.

Original Value	New Value	% Increase	% Decrease
25 frogs	125 frogs	400.0%	
\$1.25	\$2.25	80.0%	
1/4	1/2	100.0%	

- 725 12. We increase the dimensions of this rectangle by 150%. What is the perimeter of the new rectangle?



66'

- 725 13. A number increases by 20% after 1 year, then decreases by 20% after the 2nd year. Will the new number be less than, equal to or smaller than the original number?

smaller

- 726 14. You paid \$165 for a model plane that was normally \$200. What was your Discount Rate?

17.5%

- 726 15. Before school started in the fall, Joe's Books was selling *Math Madness* textbooks for \$49.95, with a 30% discount. After school started, they put the books on sale for 70% off the sales price. Are the books now free? If not, how much would a copy of Math Madness cost you after both discounts?

\$10.49

- 726 16. 1. Find the Price, rounded up to the nearest penny

Original Price	Discount	Sale Price
\$1,655.00	18%	\$1,241.25
\$7,200.00	12%	\$6,336.00

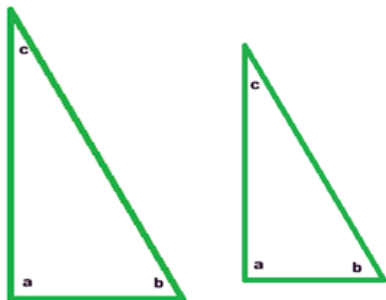
Wholesale Cost	Markup	Retail Price
\$75.00	25%	\$93.75
\$165.00	8%	\$178.20

- 727 17. Figures A and B are similar two dimensional figures. Fill in the blanks.

Figure A height	Figure B height	Figure A perimeter	Figure A area	Figure B perimeter	Figure B area
12	18	48	144	72	324
6	15	24	36	60	225
10	1	32.4	50	3.24	.5

- 727 18. Angles a, b and c are the same on each of these triangles. Are the triangles similar?

yes



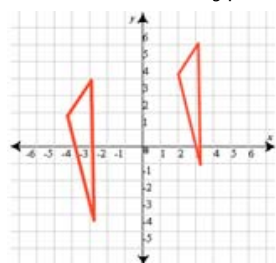
728 19. 1. Please fill in the blank

Scale	Dimension on Model	Actual Dimension
4 cm per meter	6 cm	1.5 meters
$1/2'' = 100'$	4''	800'
$1'' = 7$ yards	5.75''	40.25 yards

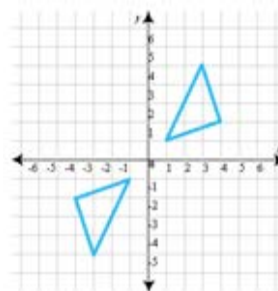
728 20. The architect's drawing of the house is at a scale of  $3/8''$  per foot. On the scale drawing, the garage is 7.5'' deep. How deep is the actual garage?

20'

729 21. What type of transformations are shown here?



translation



rotation

729 22. The coordinates of Vertex A of Triangle A are (6, -5). I translate Triangle A, and the new coordinates of Vertex A in A's Image, Triangle B, are (8, -10). Vertex B of Triangle A has coordinates of (8, 6). What are the coordinates of Vertex B in Triangle B?

(10, 1)

730 23. Find the new coordinates after reflect around the x axis

a	a'	b	b'	c	c'
(3, 2)	(3, -2)	(-4, -2)	(-4, 2)	(6, 7)	(6, -7)

730 24. These figures were reflected around the x axis. If vertex A has coordinates of (6, 5), what are the coordinates of vertex A'?



(6, -5)