

2016-2017
Mathematics Interim 2 Assessment

## Book 1



## Assessment Reference Sheet

## Grade 7

1 inch $=2.54$ centimeters
1 meter $=39.37$ inches
1 mile $=5,280$ feet
1 mile $=1,760$ yards
1 mile $=1.609$ kilometers

1 kilometer $=0.62$ mile
1 pound $=16$ ounces
1 pound $=0.454$ kilograms
1 kilogram $=2.2$ pounds
1 ton $=2,000$ pounds

1 cup $=8$ fluid ounces
1 pint $=2$ cups
1 quart $=2$ pints
1 gallon $=4$ quarts
1 gallon $=3.785$ liters
1 liter $=0.264$ gallons
1 liter $=1000$ cubic centimeters

| Triangle | $A=\frac{1}{2} b h$ |
| :--- | :---: |
| Parallelogram | $A=b h$ |
| Circle | $A=\pi r^{2}$ |
| Circle | $\mathrm{C}=\pi \mathrm{d}$ or $\mathrm{C}=2 \pi \mathrm{r}$ |
| General Prisms | $V=B h$ |

## Book 1

## TIPS FOR TAKING THE TEST

Here are some suggestions to help you do your best:

- Read each question carefully and think about the answer before choosing your response.
- You have been provided with mathematics tools (a ruler and a protractor) and a reference sheet to use during the test. It is up to you to decide when each tool and the reference sheet will be helpful. You should use mathematics tools and the reference sheet whenever you think they will help you to answer the question.
- Be sure to show your work when asked.
- Calculators are allowed on this part of the exam.
- You will have 45 minutes to take this section, plan your time.

1. Mr. Tucker earns $\$ 250$ per week working in an appliance store. In addition, he earns $2 \%$ commission on all of his sales. Last week, he sold $\$ 2,800$ worth of appliances. What was Mr. Tucker's total income for the week?
A. $\$ 56$
B. $\$ 287$
C. $\$ 306$
D. $\$ 467$
2. Mr. Jones spent $\$ 156$ to attend a college football game.

- Twenty percent of this cost was for a parking pass.
- He spent the remainder of the money on two tickets for the game.

What was the price per ticket?
A. $\$ 15.60$
B. $\$ 31.20$
C. $\$ 62.40$
D. $\$ 124.80$
3. Mike earned the amounts listed in the table below.

| Hours Worked $(h)$ | Amount Earned $(E)$ |
| :---: | :---: |
| 15 | $\$ 183.75$ |
| 22 | $\$ 269.50$ |
| 26 | $\$ 318.50$ |

Which equation could be used to find the amount of money Mike earns, $E$, for any number of hours worked, $h$ ?
A. $E=18.75+h$
B. $E=12.25+h$
C. $E=18.75 h$
D. $E=12.25 \mathrm{~h}$
4. What is the solution to the inequality $-3 x-42>3$ ?
A. $x>-13$
B. $x<-13$
C. $x>-15$
D. $x<-15$
5. Wallpaper was applied to one rectangular wall of a large room. The dimensions of the wall are shown below.

42 feet


If the total cost of the wallpaper was $\$ 771.12$, what was the cost, in dollars, of the wallpaper per square foot? Round to the nearest cent.
A. $\$ 0.61$
B. $\$ 0.72$
C. $\$ 1.39$
D. $\$ 1.65$
6. Anna saved $\$ 20$ in a jar each month for $2 \frac{1}{2}$ years. She spent $75 \%$ of her savings on a computer. How much money did Anna have left in the jar?
A. $\$ 150$
B. $\$ 240$
C. $\$ 450$
D. $\$ 600$
7. Jacob is 12 years younger than twice Elizabeth's age. Jacob is 28 years old. How old is Elizabeth?
A. 8
B. 14
C. 16
D. 20
8. The Mulraneys hired a contractor to build an addition to their home. The contractor proposed a rectangular room with an area of 300 square feet. The Mulraneys asked the contractor to change the area to 363 square feet by increasing both the length and the width by the same percentage. By what percentage did the Mulraneys ask the contractor to increase the size of the room?
Show your work.

## Answer

9. Bradley has a coupon for $15 \%$ off the price of a computer. The sales tax is $8 \%$.

## Part A



Bradley purchases a computer with a regular price of $\$ 495$. How much will he pay, including sales tax, if he uses his coupon? Fill in the blank to complete the sentence.

Answer The total cost of the computer is $\$$ $\qquad$ .

## Part B

How much money did Bradley save, including sales tax, by using his coupon? Fill in the blank to complete the sentence.

Answer Bradley saved \$ $\qquad$ .

## Part C

Lisa and Ross have the same coupon as Bradley. They discuss how the coupon and the sales tax will be applied.

Lisa believes the store will do the following:

- Take $15 \%$ off the regular price.
- Then add the sales tax to the discounted price.

She writes this equation, where $p$ is the original price of the computer, and $T$ is the total amount paid:
$T=0.85 p+0.08(0.85 p)$

Ross believes the store will do the following:

- Determine the regular price of the computer, including sales tax.
- Then take 15\% off.

He writes this equation, where $p$ is the original price of the computer, and $T$ is the total amount pain:
$T=1.08 p-0.15(1.08 p)$
Who is correct? Justify your answer by using the properties of operations.
Answer
Justification:
10. Susan joined a video rental club. She paid an initiation fee of $\$ 12.75$, and it cost $\$ 0.75$ per video that she rents.

Part A
If Susan rents 3 movies, how much money will she pay in total?

Answer $\qquad$

Part B
Write an equation to show the total amount Susan paid to rent $v$ videos.

Equation $\qquad$

## Part C

While she was a member of the club, Susan paid a total of $\$ 105.75$. How many videos did she rent?

Show your work.

## Part D

Suppose Susan had rented the same number of videos with the same initiation fee, but the cost was instead $\$ 0.95$ per video that she rented. What would she have paid in total?

Show your work.

Answer \$ $\qquad$


New York Assessment

2016-2017
Mathematics Interim 2 Assessment

## Book 2



Form C

## Assessment Reference Sheet

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| General Prisms | $V=B h$ |

## Book 2

TIPS FOR TAKING THE TEST
Here are some suggestions to help you do your best:

- Read each question carefully and think about the answer before choosing your response.
- Be sure to show your work when asked.
- Calculators are NOT allowed on this part of the exam.
- You will have 60 minutes to take this section, plan your time.

11. There are 25 students in a classroom. The ratio of girls to boys is 3 to 2 . How many boys and how many girls are there in the classroom?
A. 15 girls; 10 boys
B. 10 girls; 15 boys
C. 18 girls; 7 boys
D. 7 boys; 18 girls
12. Which of the following shows a proportional relationship between $x$ and $y$ ?
A.

C.

B.

| $X$ | 0 | 2 | 5 |
| :---: | :---: | :---: | :---: |
| $y$ | 0 | 8 | 20 |

D.

| X | 3 | 6 | 9 |
| :---: | :---: | :---: | :---: |
| y | 7 | 13 | 19 |

13. The town library is raising money by selling old books for $\$ 2$ each.

## Part A

Which equation can be used to find the amount of money raised if the number of books sold is known? Let $x$ represent the number of books sold and $y$ represent the number of dollars raised.
A. $y=\frac{x}{2}$
B. $y=2 x$
C. $y=2-x$
D. $y=2+x$

## Part B

Suppose the town library decided to double the charge for each book. What would be the equation in this case?
A. $y=4-x$
B. $y=4+x$
C. $y=4 x$
D. $y=\frac{x}{4}$
14. Ali is collecting signatures for a petition.

- He currently has 520 signatures.
- He has 6 more weeks to collect the remaining signatures he needs.
- He needs a total of at least 1,000 signatures before he can submit the petition.

Ali wants to collect the same number of signatures each week.
Which number line represents all possible numbers of signatures Ali could collect in each of the remaining weeks so that he will have enough signatures to submit the petition?
A.

B.

C.

D.

15. Jonah has a recipe that uses $1 \frac{1}{3}$ cups of brown sugar and $2 \frac{2}{3}$ cups of flour to make 24 muffins. He has a total of 7 cups of flour. Jonah wants to use all of his flour to make as many muffins as possible using this recipe.

## Part A

Exactly how many cups of brown sugar will Jonah use if he uses all 7 cups of flour?
A. $3 \frac{3}{10}$ cups
B. $4 \frac{1}{2}$ cups
C. $7 \frac{5}{6}$ cups
D. $10 \frac{8}{9}$ cups

## Part B

Exactly how many muffins will Jonah make if he uses all 7 cups of flour? Show your work.

Answer
16. The length, $l$, of a rectangle is 3 inches greater than its width, $w$. The perimeter of the rectangle is at least 30 inches.

## Part A

Which inequality shows the range of possible widths of the rectangle?
A. $w \cong 6.5$ inches
B. $w \succeq 13.5$ inches
C. $w \cong 9$ inches
D. $\mathrm{w} \cong 6$ inches

## Part B

Which inequality shows the range of possible lengths of the rectangle?
A. $\mid \cong 16.5$ inches
B. $1 \geqq 13.5$ inches
C. $I \geqq 9$ inches
D. $I \cong 6$ inches
17. Solve for $b$.

$$
\frac{9}{2}=\frac{b-27}{18}
$$

A. $b=54$
B. $b=81$
C. $b=216$
D. $b=108$
18. Lehana and Marty each opened a savings account with a deposit of $\$ 100$.

- Lehana earned 2.5\% simple interest per year.
- Marty earned 2\% simple interest per year.
- Neither of them made additional deposits or withdrawals.

How much more did Lehana receive in interest than Marty after three years?
A. $\$ 0.50$
B. $\$ 1.50$
C. $\$ 5.00$
D. $\$ 15.00$
19. What is the value of $-\frac{1}{6}+\frac{2}{3}\left(9-\frac{3}{4}\right)-\frac{1}{2}$ ?
A. $5 \frac{1}{6}$
B. $4 \frac{5}{6}$
C. $4 \frac{7}{12}$
D. $\frac{1}{4}$
20. Four local stores sell the same brand of cheddar cheese. The table below shows how much each store charges.

CHEDDAR CHEESE

| Store | Amount | Price |
| :---: | :---: | :---: |
| Store A | 3 lb | $\$ 9.00$ |
| Store B | 3 lb | $\$ 9.75$ |
| Store C | 4 lb | $\$ 12.40$ |
| Store D | 5 lb | $\$ 14.50$ |

Part A
Which store has the lowest price per pound for the cheese?
A. Store A
B. Store B
C. Store C
D. Store D

## Part B

Which store has the highest price per pound for the cheese?
A. Store A
B. Store B
C. Store C
D. Store D
21. Which of the following accurately describes the error that was made in solving or graphing the inequality below?

A. The solution should be $x<-10$ C. The arrow on the graph should point to the left direction to show values less than -10.
B. The graph should have an open circle on -10 indicating that -10 is not a solution.
D. There is no error in solving or graphing.
22. Use the ratio table to find the unit rate with the specified units.

| Plants | 2 | 4 | 6 | 12 |
| :--- | :--- | :--- | :--- | :--- |
| Cost | $\$ 6.50$ | $\$ 13.00$ | $\$ 19.50$ | $\$ 39.00$ |

A. \$3.25 per box
C. $\$ 6.50$ per box
B. $\$ 3.50$ per box
D. $\$ 6.50$ per 2 boxes
23.The graph shows the amount of money Hachi earns at his job in relation to the number of hours he works.


Which statement is true?
A. The point $(0,0)$ means that Hachi does not earn any money if he does not work.
C. The point $(0,0)$ means that Hachi worked 0 days last week.
B. The point $(0,0)$ means that Hachi does not earn any money when he works
D. The point $(0,0)$ means that Hachi earned $\$ 0$ last week.
24. Which pair of expressions are equivalent?
A. $14-9$ and $14+(-9)$
C. $-7-22$ and $22-(-7)$
B. $18-6$ and $-18+6$
D. 10-5 and -5-10
25. Dan painted $\frac{3}{4}$ of a wall using $\frac{1}{4}$ of a can of paint. Which statement is true?
A. He can paint 2 walls with $\frac{1}{2}$ can of paint.
C. He can paint 5 walls with $1 \frac{2}{3}$ cans of paint.
B. He can paint 4 walls with 1 can of paint.
D. He can paint 8 walls with 2 cans of paint.
26. Which relationship has the same constant of proportionality between $y$ and $x$ as in the equation $y=\frac{1}{3} x$ ?
A.

C.

| $x$ | -1.5 | 0 | 1.6 | 9.7 |
| ---: | ---: | :--- | :--- | ---: |
| $y$ | -4.5 | 0 | 4.8 | 29.1 |

B.

D.

| $x$ | -5.4 | -2.7 | 1.5 | 2.4 |
| :---: | :---: | :---: | :---: | :---: |
| $y$ | -1.8 | -0.9 | 0.5 | 0.8 |

27. Christy went jogging on Saturday. The table shows how far she had jogged after various times.

| Distance (miles) | 10 | 15 | 20 |
| :---: | :---: | :---: | :---: |
| Time (hours) | 2 | 3 | 4 |



## Part A

Christy subtracted to find her jogging rate for each period and said that her rate increased each hour, from 8 miles per hour to 12 miles per hour to 16 miles per hour. Is Christy correct? Explain why or why not.

## Part B

If Christy runs at a constant rate, how far will she have traveled after 1 hour? Explain.

## Answer

28. A group of friends gathered in a park for a scavenger hunt. From their starting point, Andy and Olga walked in opposite directions. Andy walked west 300 feet, and Olga walked east 400 feet.

## Part A

Draw a number line, and plot Andy's and Olga's ending location. Consider the starting point to be 0, west to be the negative direction, and east to be the positive direction.

## Part B

How far apart are Andy and Olga at their ending locations?

Answer $\qquad$ feet

## Part C

Write two different expressions that you could use to find the distance between Olga and Andy.

Expressions $\qquad$
29. Jana is taking pledges for a bike-a-thon fundraiser.

- Ivan pledges $\$ 4.25$, plus $\$ 1.25$ for each mile that Jana bikes.
- Vicky pledges $\$ 5.75$, plus $\$ 0.75$ for each mile that Jana bikes.



## Part A

What expressions can represent the number of dollars Ivan pledges and the number of dollars Vicky pledges? Choose numbers from the set shown to complete the expressions. Assume $m$ is the number of miles that Jana bikes.
$5.75,1.25,0.75,4.25$

Answers Ivan: $\qquad$ $+$ $\qquad$ m

Answers Vicky: $\qquad$ $+$ $\qquad$ m

## Part B

Add the two expressions from Part A to find the combined amount that Ivan and Vicky pledge in terms of $m$.

Show your work.
$\qquad$

## Part C

Find an expression equivalent to the one from Part B by factoring out the greatest common factor from the two terms.

Show your work.

Answer $\qquad$
30. A piece of wood is $\frac{5}{16}$ inch thick. What is the same number of inches written as a decimal?

Show your work.

Answer $\qquad$ inch(es)

