## Mathematics

## Forward Exam

 Practice Test Grade 7Developed and published under contract with the Wisconsin Department of Public Instruction by Data Recognition Corporation, 13490 Bass Lake Road, Maple Grove, MN 55311. Copyright © 2024 by the Wisconsin Department of Public Instruction. All rights reserved. Only State of Wisconsin educators and citizens may copy, download, and/or print the document, located online at https://dpi.wi.gov/assessment/forward/sample-items. Any other use or reproduction of this document, in whole or in part, requires written permission of the Wisconsin Department of Public Instruction.

The Wisconsin Department of Public Instruction does not discriminate on the basis of sex, race, color, religion, creed, age, national origin, ancestry, pregnancy, marital status or parental status, sexual orientation, or disability.
MATHEMATICS NON-CALCULATOR ITEMS-SESSION 1 ..... 1
MATHEMATICS CALCULATOR ITEMS-SESSION 2 ..... 8
MATHEMATICS-APPENDIX ..... 20

THIS PAGE IS INTENTIONALLY BLANK.

## MATHEMATICS NON-CALCULATOR ITEMS-SESSION 1

Answer the items below. A calculator may not be used to assist with calculations necessary to answer items in Session 1.

1. What is the value of the expression $-(7-15+7)-2$ ?
A. -31
B. -17
C. -3
D. -1
2. Allan had a gift card with a balance of $\$ 75.00$. He used the gift card to purchase $\$ 34.50$ worth of clothes. Which transaction would make the balance of the gift card $\$ 0.00$ ?
A. a purchase of $\$ 34.50$
B. a purchase of $\$ 40.50$
C. a deposit of $\$ 34.50$ to the gift card
D. a deposit of $\$ 40.50$ to the gift card
3. Match each expression to an equivalent expression.

$$
\frac{3}{4}(8 x)+8
$$

$$
6 x+6
$$

$$
\frac{3}{4}(16 x)+8
$$

$$
6 x+8
$$

$$
\frac{3}{4}(8 x+8)
$$

$$
12 x+6
$$

$$
\frac{3}{4}(16 x+8)
$$

$$
12 x+8
$$

4. Joaquin ran $4 \frac{1}{2}$ miles each day for 4 consecutive days. On the fifth day, he ran $6 \frac{3}{4}$ miles. How many total miles did Joaquin run during these 5 days?

5. A basketball coach lowers the height of a basketball hoop by $b$ inches for the elementary gym class. After the elementary gym class, the coach raises the height of the basketball hoop by $b$ inches. Which statement best describes the height of the basketball hoop after both changes?
A. The height of the basketball hoop is 0 inches.
B. The height of the basketball hoop is $b$ inches.
C. The height of the basketball hoop is back to its initial height.
D. The height of the basketball hoop is $2 b$ inches more than its initial height.
6. Jorge writes the expression $0.88 x$ to represent the final cost of a shirt. Which statement about the original cost of the shirt, $x$, is true?
A. To get the final cost of the shirt, the original cost of the shirt is decreased by $12 \%$.
B. To get the final cost of the shirt, the original cost of the shirt is decreased by $88 \%$.
C. To get the final cost of the shirt, the original cost of the shirt is increased by $12 \%$.
D. To get the final cost of the shirt, the original cost of the shirt is increased by $88 \%$.
7. Which number is equivalent to $\frac{8}{9}$ ?
A. $0 . \overline{8}$
B. 0.89
C. 0.98
D. $0 . \overline{9}$
8. The number line shows the locations of points $A$ and $B$.


Select the two expressions that can be used to determine the distance between $A$ and $B$.
Select two options.
A. $|-2-(-8)|$
B. $|-2-8|$
C. $|-2|-|8|$
D. $|8-2|$
E. $|8-(-2)|$
9. An expression is shown.
$\frac{1}{3}(x-4)$
Write a different expression that is equivalent to the given expression.

10. Hannah and Rachel are both finding a decimal that is equivalent to $-\frac{3}{8}$. Hannah states that the decimal can be found by dividing -3 by 8 . Rachel states that the decimal can be found by dividing 3 by - 8 . Use the words below the blank line to complete the statement.
$\qquad$ method can be used to find an equivalent decimal number.

Only Hannah's
Only Rachel's
Either Hannah's or Rachel's
Neither Hannah's nor Rachel's



## MATHEMATICS CALCULATOR ITEMS-SESSION 2

Answer the items below. A calculator may be used to assist with calculations necessary to answer items in Session 2.

1. A worker is pouring concrete for a new section of a road. The level of the concrete is rising at a rate of $\frac{1}{3}$ foot every $\frac{1}{4}$ hour. Write a number from the list in each box to represent the rate at which the level of concrete is rising every hour.

2. A town surveyed 100 people to find out how many people use the library. Of the 100 people randomly selected for the survey, 15 people use the library. Based on the survey, how many of the 5,460 people in the town can be expected to use the library?
$\square$
3. A student drew a circle that has a diameter of 7.6 centimeters. Which measure is closest to the area, in square centimeters, of the circle?
A. 12
B. 24
C. 45
D. 182
4. The graph shows the cost, in dollars, of bananas based on the weight, in pounds, of the bananas.


Select the two true statements about the points on the graph.
Select two options.
A. Point $K$ represents a cost of $\$ 0$ for 0 pounds of bananas.
B. Point $L$ represents a cost of $\$ 1$ for 0.5 pound of bananas.
C. Point $L$ represents a cost of $\$ 0.50$ for 1 pound of bananas.
D. Point $M$ represents a cost of $\$ 4$ for 2 pounds of bananas.
E. Point $M$ represents a cost of $\$ 6$ for 4 pounds of bananas.
5. A company pays an artist $\$ 12,500$ to use a painting. The company also pays the artist $\$ 1.20$ for each print of the painting that is sold. Which inequality represents the total number of prints of the painting, $x$, that need to be sold for the company to pay the artist more than $\$ 50,000$ ?
A. $12,500+1.20 x>50,000$
B. $12,500+1.20 x<50,000$
C. $1.20+12,500 x>50,000$
D. $1.20+12,500 x<50,000$
6. There are 15 blue marbles, 8 green marbles, and 7 red marbles in a bag. Hanna randomly draws a marble from the bag. What is the probability that Hanna draws a blue marble?
A. $\frac{1}{30}$
B. $\frac{7}{30}$
C. $\frac{10}{30}$
D. $\frac{15}{30}$
7. A line representing a proportional relationship is shown on the coordinate grid.


What is the constant of proportionality of the relationship?

8. A triangle has one angle that measures $90^{\circ}$ and side lengths of 6,8 , and 10 units. One of the sides of the triangle is shown in the grid. Draw the other two sides of the triangle.

9. A trapezoid has an area of 88 square inches. The length of one of the bases of the trapezoid is 10 inches. The height of the trapezoid is 8 inches. The equation shown can be used to find the length, in inches, of the unknown base, $b$.

$$
88=(0.5)(8)(10+b)
$$

What is the length, in inches, of the unknown base of the trapezoid?
A. 12
B. 26
C. 32
D. 48
10. A middle school had a fundraiser. The two line plots show how much money, in dollars, was raised by a random sample of 10 students in each of the 7 th and 8 th grades.

## 7th-Grade Fundraiser



## 8th-Grade Fundraiser



Which statement correctly compares the data in the two line plots?
A. The range of the 8 th-grade data is greater than the range of the 7 th-grade data.
B. The interquartile range of the 7th-grade data is less than the interquartile range of the 8th-grade data.
C. The mean and the median of the 7 th-grade data are greater than the mean and the median of the 8th-grade data.
D. The mean and the median of the 8th-grade data are greater than the mean and the median of the 7th-grade data.
11. A company sells waffles in boxes. Each box contains the same numbers of waffles. The table shows the number of waffles in different numbers of boxes.

## Waffle Boxes

| Number of <br> Boxes | Number of <br> Waffles |
| :---: | :---: |
| 2 | 16 |
| 4 | 32 |
| 5 | 40 |
| 7 | 56 |

Which statement correctly describes whether the relationship shown in the table is a proportional relationship?
A. The relationship is proportional because both the number of boxes and the number of waffles are increasing.
B. The relationship is proportional because the ratio between the number of boxes and the number of waffles is constant.
C. The relationship is not proportional, because the values for the number of boxes are not consecutive numbers.
D. The relationship is not proportional, because when graphed on a coordinate grid the relationship does not pass through the origin.
12. A student wants to spend no more than $\$ 24$ on a bouquet of flowers. The student wants the bouquet to have 3 red flowers and some white flowers. Red flowers cost $\$ 2$ each and white flowers cost $\$ 3$ each. Graph the inequality that represents all the possible numbers of white flowers, $x$, the student can buy for the bouquet.

13. Cindy is rolling two six-sided number cubes one at a time. The table shows all the possible combinations of Cindy's two rolls.

Second Roll

|  |  | 1 | 2 | 3 | 4 | 5 | 6 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | 1 | 1, 1 | 1,2 | 1,3 | 1, 4 | 1,5 | 1,6 |
|  | 2 | 2, 1 | 2, 2 | 2, 3 | 2, 4 | 2,5 | 2, 6 |
| $\stackrel{1}{4}$ | 3 | 3, 1 | 3, 2 | 3, 3 | 3, 4 | 3, 5 | 3, 6 |
| $\stackrel{\rightharpoonup}{\omega}$ | 4 | 4, 1 | 4,2 | 4,3 | 4, 4 | 4, 5 | 4, 6 |
|  | 5 | 5, 1 | 5, 2 | 5, 3 | 5, 4 | 5, 5 | 5, 6 |
|  | 6 | 6, 1 | 6, 2 | 6, 3 | 6, 4 | 6, 5 | 6, 6 |

What is the probability that Cindy rolls an even number first and an odd number second?
$\square$
14. Susan rides her bicycle $\frac{1}{2}$ of the way around a lake in $\frac{1}{5}$ of an hour. How many times can she ride around the lake in 1 hour?
A. $\frac{1}{10}$
B. $\frac{1}{7}$
C. $\frac{7}{10}$
D. $\frac{5}{2}$
15. Angle $P$ is complementary to angle $Q$. Which equation can be used to determine the measure of angle P?
A. $m \angle P=90^{\circ}+m \angle Q$
B. $m \angle P=90^{\circ}-m \angle Q$
C. $m \angle P=180^{\circ}+m \angle Q$
D. $m \angle P=180^{\circ}-m \angle Q$
16. A school is buying new chairs for the tables in its cafeteria.

- The cafeteria has 8 round tables and 5 rectangular tables.
- Each round table will have 6 chairs.
- Each rectangular table will have 8 chairs.
- A set of 12 chairs costs $\$ 112.00$.
- Individual chairs cost $\$ 10$ each.

What is the least amount of money, in dollars, the school could pay for all the chairs needed for the tables in the cafeteria?

17. Fernando is playing basketball. He has made 18 free throws out of 30 attempts. At this rate, how many of Fernando's next 50 free throws should he expect to make?
A. 18
B. 30
C. 38
D. 50
18. The probability of rain on Saturday is 0.13 . Which statement most accurately describes the likelihood of rain on Saturday?
A. It is not likely that it will rain on Saturday.
B. It is neither likely nor unlikely that it will rain on Saturday.
C. It is likely that it will rain on Saturday.
D. It is almost certain that it will rain on Saturday.
19. A square pyramid is shown.


The pyramid is sliced parallel to its base with a single straight cut. The exposed cross section is painted. For each shape in the table, determine whether it could be the painted cross section of the square pyramid.

|  | Could Be Painted <br> Cross Section | Could Not Be Painted <br> Cross Section |
| :--- | :---: | :---: |
| square |  |  |
| triangle |  |  |
| trapezoid |  |  |

20. Victoria ran $4 \frac{1}{2}$ miles in $\frac{2}{3}$ hour. What was Victoria's speed in miles per hour?
A. 3
B. $3 \frac{5}{6}$
C. $5 \frac{1}{6}$
D. $6 \frac{3}{4}$


## MATHEMATICS-APPENDIX

## SUMMARY DATA-GRADE 7, SESSION 1

| Number 1 |  |
| :--- | :--- |
| Alignment | M.7.NS.A.1d |
| Depth of Knowledge | 1 |
| Key(s) | D |
| Points | 1 |
| Annotations | The question asks the student to find the value of the expression <br> $-(7-15+7)-2$. <br> A. Incorrect. The student evaluated -7-15-7-2. <br> B. Incorrect. The student evaluates the expression from left to right without <br> taking the grouping symbols into account. <br> C. Incorrect. The student does not account for the negative sign before the <br> grouping symbols. <br> D. Correct. The student correctly evaluates the expression. |


| Number 2 |  |
| :--- | :--- |
| Alignment | M.7.NS.A.1a |
| Depth of Knowledge | 2 |
| Key(s) | B |
| Points | 1 |
| Annotations | The question asks the student to determine a transaction that results in a <br> sum of \$0. <br> A. Incorrect. The student repeats the first purchase. <br> B. Correct. The student finds the transaction amount that reduces the value <br> remaining on the gift card to \$0. | | C. Incorrect. The student reverses the first purchase. |
| :--- |
| D. Incorrect. The student adds the amount remaining instead of removing |
| the amount remaining. |


| Number 3 |  |
| :---: | :---: |
| Alignment | M.7.EE.A. 1 |
| Depth of Knowledge | 1 |
| Key(s) | See Annotations |
| Points | 1 |
| Annotations | The question asks the student to expand linear expressions with rational coefficients to find an equivalent expression. <br> To receive full credit, the student must match all expressions correctly, as shown. |


| Number 4 |  |
| :--- | :--- |
| Alignment | M.7.NS.A.3 |
| Depth of Knowledge | 2 |
| Key(s) | $24 \frac{3}{4}$ |
| Points | 1 |
| Annotations | The question asks the student to determine the total distance Joaquin runs <br> over 5 days. <br> To receive full credit, the student must enter $24 \frac{3}{4}$ or an equivalent value. |


| Number 5 | M.7.NS.A.1b |
| :--- | :--- |
| Alignment | C |
| Depth of Knowledge | C |
| Key(s) | 1 |
| Points | The question asks the student to determine the height of a basketball hoop <br> after it is moved down $b$ inches and up $b$ inches. <br> A. Incorrect. The student finds the change in the height. <br> B. Incorrect. The student uses the magnitude of the change in height up or <br> down. <br> Annotations Correct. The student finds the total change in the height. <br> D. Incorrect. The student adds the absolute values of the two changes in <br> height. |


| Number 6 | M.7.EE.A.2 |
| :--- | :--- |
| Alignment | 2 |
| Depth of Knowledge | A |
| Key(s) | 1 |
| Points | The question asks the student to determine the change in the price. <br> Annotations <br> A. Correct. The student identifies the change as a 12\% decrease. <br> B. Incorrect. The student identifies the change as an 88\% decrease. <br> C. Incorrect. The student identifies the change as a 12\% increase. <br> D. Incorrect. The student identifies the change as an 88\% increase. |


| Number 7 |  |
| :---: | :---: |
| Alignment | M.7.NS.A.2d |
| Depth of Knowledge | 1 |
| Key(s) | A |
| Points | 1 |
| Annotations | The question asks the student to convert a fraction to a decimal. <br> A. Correct. The student divides the numerator, 8 , by the denominator, 9 . <br> B. Incorrect. The student uses the numerator, 8 , and the denominator, 9 , as the two numbers after the decimal point. <br> C. Incorrect. The student uses the denominator, 9 , and the numerator, 8 , as the two numbers after the decimal point. <br> D. Incorrect. The student uses the denominator, 9, as the number after the decimal point. |


| Number 8 | M.7.NS.A.1c |
| :--- | :--- |
| Alignment | 2 |
| Depth of Knowledge | B, E |
| Key(s) | 2 |
| Points | The question asks the student to identify two expressions representing the <br> distance between two points. <br> To receive full credit, the student must select both choices B and E. <br> One point will be given for selecting either choice B or choice E. |
| Annotations | A. Incorrect. The student reverses the sign on the 8. <br> B. Correct. The student finds the absolute value of the difference of the <br> two points. <br> C. Incorrect. The student finds the difference of the absolute values of the <br> two points. <br> D. Incorrect. The student reverses the sign on the 2. <br> E. Correct. The student finds the absolute value of the difference of the <br> two points. |


| Number 9 |  |
| :--- | :--- |
| Alignment | M.7.EE.A.1 |
| Depth of Knowledge | 1 |
| Key(s) | $\frac{1}{3} x-\frac{4}{3}$ |$|$| Points | The question asks the student to create an expression that is equivalent to <br> the given expression. <br> To receive full credit, the student must enter $\frac{1}{3} x-\frac{4}{3}$ or an equivalent <br> expression. |
| :--- | :--- |
| Annotations | The student will not receive credit for entering the expression given in the <br> prompt, $\frac{1}{3}(x-4)$. |


| Number 10 |  |
| :--- | :--- |
| Alignment | M.7.NS.A.2b |
| Depth of Knowledge | 1 |
| Key(s) | See Annotations |
| Points | 1 |
| Annotations | The question asks the student to determine which methods can be used to <br> convert $-\frac{3}{8}$ to a decimal. <br> To receive full credit, the student must select "Either Hannah's or Rachel's" <br> from the drop-down menu. |

## SUMMARY DATA-GRADE 7, SESSION 2

| Number 1 | M.7.RP.A.1 |
| :--- | :--- |
| Alignment | See Annotations |
| Depth of Knowledge | 1 |
| Key(s) | 1 |
| Points | The question asks the student to create a ratio representing the rate at <br> which concrete is rising. <br> To receive full credit, the student must move the fraction $\frac{1}{3}$ into the top box <br> and the fraction $\frac{1}{4}$ into the bottom box or create the fraction $\frac{4}{3}$. |


| Number $\mathbf{2}$ |  |
| :--- | :--- |
| Alignment | M.7.SP.A. 2 |
| Depth of Knowledge | 2 |
| Key(s) | 819 |
| Points | 1 |
| Annotations | The question asks the student to predict the number of people in a town <br> who use the library based on a survey of a sample of the population. <br> To receive full credit, the student must enter 819 or an equivalent value. |


| Number 3 | M.7.G.B.4 |
| :--- | :--- |
| Alignment | C |
| Depth of Knowledge | 1 |
| Key(s) | The question asks the student to determine the area of a circle. <br> Points <br> Annotations <br> the radius by 3.14. <br> B. Incorrect. The student determines the area of the circle by multiplying <br> the diameter by 3.14. |
| C. Correct. The student determines the area of the circle by squaring the |  |
| radius and multiplying by 3.14. |  |
| D. Incorrect. The student determines the area of the circle by squaring the |  |
| diameter and multiplying by 3.14. |  |


| Number 4 | M.7.RP.A.2d |
| :--- | :--- |
| Alignment | A, C |
| Depth of Knowledge | 2 |
| Key(s) | 2 |
| Points | The question asks the student to interpret points on a graph. <br> To receive full credit, the student must select both choices A and C. <br> One point will be given for selecting either choice A or choice C but not <br> both. <br> A. Correct. The student identifies the meaning of point K. <br> B. Incorrect. The student reverses the meaning of the two coordinates of <br> point L. <br> C. Correct. The student identifies the meaning of point L. <br> D. Incorrect. The student reverses the meaning of the two coordinates of <br> point M. |
| E. Incorrect. The student uses the sum of the coordinates as the price. |  |


| Number 5 | M.7.EE.B.4b |
| :--- | :--- |
| Alignment | A |
| Depth of Knowledge | 1 |
| Key(s) | A. Correct. The student multiplies the payment per painting sold by the <br> number of paintings sold, adds the product to the initial payment, and <br> sets the sum greater than 50,000. |
| Annotations | The question asks the student to determine an inequality that matches a <br> given context. |
| Incorrect. The student multiplies the payment per painting sold by the |  |
| number of paintings sold, adds the product to the initial payment, and |  |
| sets the sum less than 50,000. |  |
| C. Incorrect. The student multiplies the initial payment by the number of |  |
| paintings sold, adds the product to the payment per painting sold, and |  |
| sets the sum greater than 50,000. |  |


| Number 6 | M.7.SP.C.7a |
| :--- | :--- |
| Alignment | D |
| Depth of Knowledge | D |
| Key(s) | 1 |
| Points | The question asks the student to determine the probability of Hanna <br> drawing a blue marble. |
| Annotations | A. Incorrect. The student represents the probability as 1 marble out of a <br> total of 30 possible marbles. <br> B. Incorrect. The student determines the probability of drawing a red <br> marble. <br> C. Incorrect. The student assigns equal probability to each marble color. <br> D. Correct. The student determines the probability as 15 blue marbles out <br> of a total of 30 marbles. |


| Number 7 |  |
| :--- | :--- |
| Alignment | M.7.RP.A.2b |
| Depth of Knowledge | 1 |
| Key(s) | $\frac{1}{3}$ |
| Points | 1 |
| Annotations | The question asks the student to determine the constant of proportionality <br> from a graph. <br> To receive full credit, the student must enter $\frac{1}{3}$ or an equivalent value. |


| Number 8 | M.7.G.A.2 |  |
| :--- | :--- | :--- |
| Alignment | See Annotations |  |
| Depth of Knowledge | 2 |  |
| Key(s) | 1 | The question asks the student to create a triangle with given characteristics. <br> To receive full credit, the student must plot points at (1, 1), (7, 1), and (7, 9) <br> and connect the points to form a right triangle OR plot points at (1, 1), (7, 1), <br> and (1, 9) and connect the points to form a right triangle, as shown. |
| Annotations |  |  |


| Number 9 | M.7.EE.B.4a |
| :--- | :--- |
| Alignment | A |
| Depth of Knowledge | 1 |
| Key(s) | 1 |
| Points | The question asks the student to determine an unknown base length in a <br> trapezoid when given an equation. |
| Annotations | A. Correct. The student divides 88 by 4 and subtracts 10 from the quotient. <br> B. Incorrect. The student divides 88 by 2, subtracts 8 from the quotient, <br> and subtracts 10 more from the difference. |
| C. Incorrect. The student divides 88 by 4 and adds 10 to the quotient. |  |
| D. Incorrect. The student subtracts the product of $0.5,8$, and 10 from 88. |  |


| Number 10 | M.7.SP.B.4 |
| :--- | :--- |
| Alignment | C |
| Depth of Knowledge | 2 |
| Key(s) | 1 |
| Points | The question asks the student to compare two line plots. |
| Annotations | A. Incorrect. The student uses the difference between the highest <br> frequency and the lowest frequency as the range. <br> B.Incorrect. The student uses the difference between the highest <br> frequency and the lowest frequency as the interquartile range. <br> C.Correct. The student compares the measures of center of the 7th-grade <br> fundraiser and the 8th-grade fundraiser. <br> D. Incorrect. The student reverses the comparison of the measures of <br> center of the 7th-grade fundraiser and the 8th-grade fundraiser. |


| Number 11 | M.7.RP.A.2a |
| :--- | :--- |
| Alignment | B |
| Depth of Knowledge | 2 |
| Key(s) | 1 |
| Points | The question asks the student to determine whether the relationship <br> between the number of boxes and the number of waffles is proportional and <br> support the determination. |
| Annotations | A. Incorrect. The student interprets "proportional" to mean "increasing." <br> B. Correct. The student determines that the relationship is proportional <br> because the ratio of boxes to waffles is constant. <br> C.Incorrect. The student interprets "proportional" to mean that the <br> numbers of boxes must be consecutive whole numbers. <br> D. Incorrect. The student does not extend the pattern back to zero boxes to <br> see that the relationship does pass through the origin. |


| Number 12 |  |
| :--- | :--- |
| Alignment | M.7.EE.B.4b |
| Depth of Knowledge | 2 |
| Key(s) | See Annotations |
| Points | 1 |
| Annotations | The question asks the student to graph an inequality representing the <br> possible numbers of white flowers for a bouquet. <br> To receive full credit, the student must plot a closed point at 6 and place an <br> arrow shaded to the left, as shown. <br> 4 |

## Number 13

| Alignment | M.7.SP.C.8a |
| :--- | :--- |
| Depth of Knowledge | 2 |
| Key(s) | $\frac{1}{4}$ |
| Points | 1 |
| Annotations | The question asks the student to determine the probability of rolling an <br> even number first and an odd number second when rolling two number <br> cubes. |

To receive full credit, the student must enter $\frac{1}{4}$ or an equivalent value.

| Number 14 | M.7.RP.A.1 |
| :--- | :--- |
| Alignment | D |
| Depth of Knowledge | 1 |
| Key(s) | 1 |
| Points | The question asks the student to find the number of times Susan can ride <br> her bicycle around a lake in 1 hour at a rate of $\frac{1}{2}$ time in $\frac{1}{5}$ hour. |
| Annotations | A. Incorrect. The student multiplies $\frac{1}{2}$ by $\frac{1}{5}$. <br> denominators of $\frac{1}{2}$ and $\frac{1}{5}$. |
|  | C. Incorrect. The student adds $\frac{1}{2}$ and $\frac{1}{5}$. <br> D. Correct. The student divides $\frac{1}{2}$ by $\frac{1}{5}$. |


| Number 15 | M.7.G.B.5 |
| :--- | :--- |
| Alignment | B |
| Depth of Knowledge | 2 |
| Key(s) | 1 |
| Points | The question asks the student to identify an equation relating <br> complementary angles P and Q. <br> AnnotationsA. Incorrect. The student adds $90^{\circ}$ to the measure of angle Q to find the <br> measure of angle P. |
| the measure of angle P. The stracts the measure of angle Q from $90^{\circ}$ to find |  |
| C. Incorrect. The student adds $180^{\circ}$ to the measure of angle Q to find the |  |
| measure of angle P. |  |
| D. Incorrect. The student subtracts the measure of angle Q from $180^{\circ}$ to |  |
| find the measure of angle P. |  |


| Number 16 |  |
| :--- | :--- |
| Alignment | M.7.EE.B.3 |
| Depth of Knowledge | 2 |
| Key(s) | 824 |
| Points | 1 |
| Annotations | The question asks the student to determine the minimum cost of buying <br> enough chairs for a school cafeteria. <br> To receive full credit, the student must enter 824 or an equivalent value. |


| Number $\mathbf{1 7}$ (M.7.RP.A.3 |  |
| :--- | :--- |
| Alignment | 2 |
| Depth of Knowledge | B |
| Key(s) | 1 |
| Points | The question asks the student to predict the number of free throws <br> Fernando will make in 50 attempts at a rate of making 18 out of 30. <br> Annotations <br> A. Incorrect. The student uses the number made out of 30 as the number <br> made out of 50. |
| B. Correct. The student uses a unit rate of 0.6 and multiplies it by 50. <br> C. Incorrect. The student adds 18 and 20. <br> D. Incorrect. The student uses the total number of attempts as the <br> expected number made. |  |


| Number 18 |  |
| :--- | :--- |
| Alignment | M.7.SP.C.5 |
| Depth of Knowledge | 1 |
| Key(s) | A |
| Points | 1 |
| Annotations | The question asks the student to interpret a probability. <br> A. Correct. The student interprets 0.13 as not likely. <br> B. Incorrect. The student interprets 0.13 as neither likely nor unlikely. <br> C. Incorrect. The student interprets 0.13 as likely. <br> D. Incorrect. The student interprets 0.13 as almost certain. |


| Number 19 | M.7.G.A.3 |
| :--- | :--- |
| Alignment | 2 |
| Depth of Knowledge | square: Could <br> triangle: Could Not <br> trapezoid: Could Not |
| Key(s) | 1 |
| Points | The question asks the student to determine which cross sections can be the <br> result of slicing a square pyramid parallel to the base. <br> To receive full credit, the student must select "Could Be Painted Cross <br> Section" for square and "Could Not Be Painted Cross Section" for both <br> triangle and trapezoid. |
| Annotations |  |


| Number 20 | M.7.RP.A.2b |
| :--- | :--- |
| Alignment | D |
| Depth of Knowledge | 2 |
| Key(s) | 1 |
| Points | The question asks the student to determine Victoria's speed when she runs <br> $4 \frac{1}{2}$ miles in $\frac{2}{3}$ hour. <br> Annotations <br>  <br>  <br> A. Incorrect. The student multiplies $4 \frac{1}{2}$ and $\frac{2}{3}$. <br> B. Incorrect. The student subtracts $\frac{2}{3}$ from $4 \frac{1}{2}$. <br> C. Incorrect. The student adds $4 \frac{1}{2}$ and $\frac{2}{3}$. <br> D. Correct. The student divides $4 \frac{1}{2}$ by $\frac{2}{3}$. |

## Mathematics <br> Practice Test Grade 7

 in this publication may be duplicated by Wisconsin educators for local classroom use. This permission does not extend to the duplication of materials for commercial use.