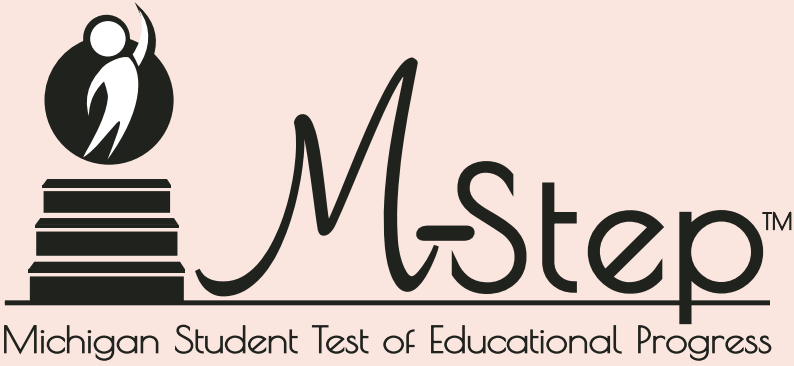


Student Name _____



3rd

4th

5th

6th

7th

8th

FS

Sample Items

Grade

7

Form

S

MATHEMATICS
Spring 2015

No calculators allowed on items 1 to 8.

1. Enter the value of $\frac{3}{4} + \frac{7}{12} - (-4)$.

	/	/	/	
•	•	•	•	•
0	0	0	0	0
1	1	1	1	1
2	2	2	2	2
3	3	3	3	3
4	4	4	4	4
5	5	5	5	5
6	6	6	6	6
7	7	7	7	7
8	8	8	8	8
9	9	9	9	9

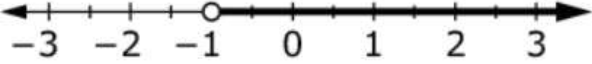

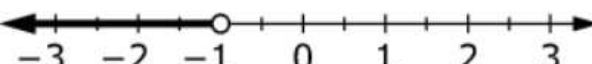
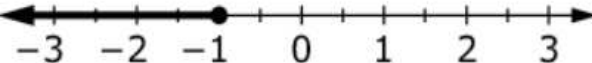
2. Mark buys a wooden board that is $7\frac{1}{2}$ feet long. The cost of the wooden board is \$0.50 per foot, including tax.

Enter the total cost in dollars of the wooden board.

	/	/	/	
•	•	•	•	•
0	0	0	0	0
1	1	1	1	1
2	2	2	2	2
3	3	3	3	3
4	4	4	4	4
5	5	5	5	5
6	6	6	6	6
7	7	7	7	7
8	8	8	8	8
9	9	9	9	9

3. Which number line shows the solution to the inequality

$$-3x - 5 < -2?$$

- A. 
- B. 
- C. 
- D. 

4. Enter the value of the expression.

$$2.3 \bullet (4 + 12)$$

	/	/	/	
•	•	•	•	•
0	0	0	0	0
1	1	1	1	1
2	2	2	2	2
3	3	3	3	3
4	4	4	4	4
5	5	5	5	5
6	6	6	6	6
7	7	7	7	7
8	8	8	8	8
9	9	9	9	9

5. Enter the value of p so the expression $\frac{5}{6} - \frac{1}{3}n$ is equivalent to $p(5 - 2n)$.

	/	/	/	
•	•	•	•	•
0	0	0	0	0
1	1	1	1	1
2	2	2	2	2
3	3	3	3	3
4	4	4	4	4
5	5	5	5	5
6	6	6	6	6
7	7	7	7	7
8	8	8	8	8
9	9	9	9	9

6. A representative sample of 50 students from a high school is surveyed. Each student is asked what science class he or she is taking.

This table shows the responses.

Science Class	Number of Students
Physics	6
Chemistry	10
Biology	18
Earth Science	4
Health Science	12

Select **all** of the statements that are valid based on the survey results.

- ☐ About 20% of students at the high school are taking Chemistry.
- ☐ About twice as many students are taking Health Science than are taking Physics.
- ☐ About twice as many students are taking Health Science than are taking Physics.
- ☐ For every 150 students we could predict that at least 18 of the students are taking Physics.
- ☐ For every 25 students we could predict that at least 4 of the students are taking Earth Science.

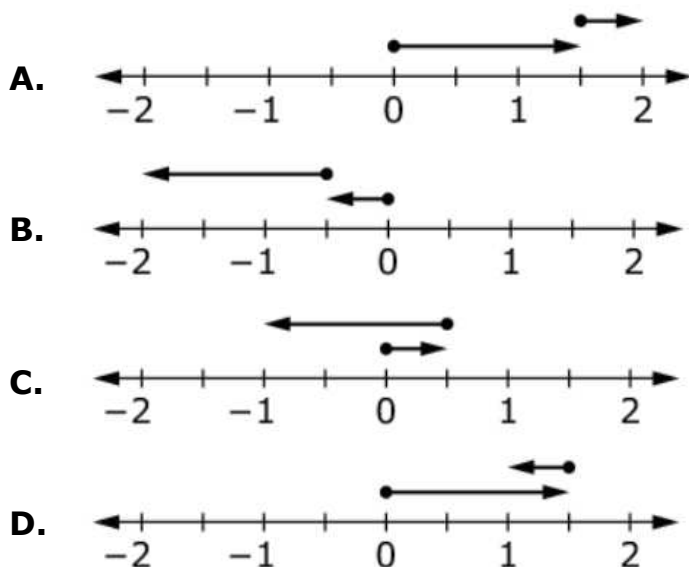
7. George earns \$455 per week. George receives a 20% raise.

How can George calculate his new weekly pay rate?

Select all calculations that will result in George's new weekly pay rate.

- ☐ divide \$455 by 0.20
- ☐ divide \$455 by 1.20
- ☐ multiply \$455 by 0.20
- ☐ multiply \$455 by 1.20
- ☐ solve for x : $\frac{x}{455} = \frac{120}{100}$
- ☐ solve for x : $\frac{455}{x} = \frac{20}{100}$

8. Which number line model represents the sum of $1\frac{1}{2} + (-\frac{1}{2})$?



Calculators allowed on following items.

9. This table shows a proportional relationship between x and y .

x	y
4	48
5	60
8	96

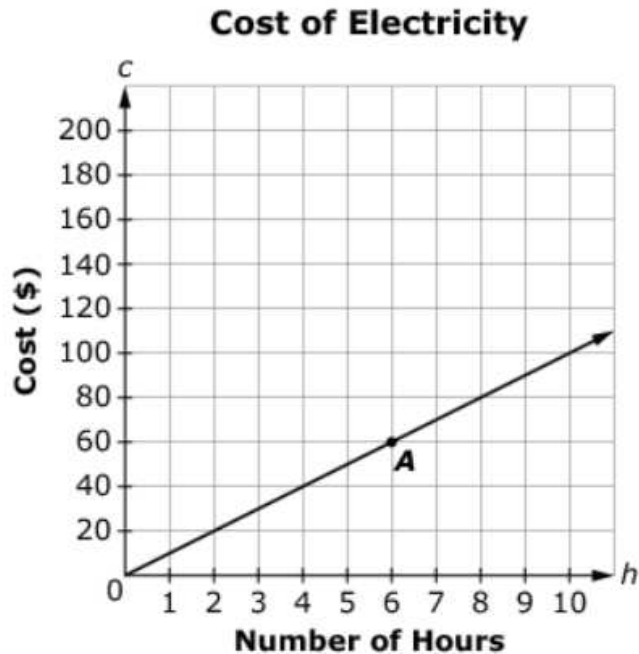
Find the constant of proportionality (r).

Using the value for r , enter an equation in the form of $y = rx$.

	/	/	/	
•	•	•	•	•
0	0	0	0	0
1	1	1	1	1
2	2	2	2	2
3	3	3	3	3
4	4	4	4	4
5	5	5	5	5
6	6	6	6	6
7	7	7	7	7
8	8	8	8	8
9	9	9	9	9

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10. This graph shows a proportional relationship between the number of hours (h) a business operates and the total cost (c) of electricity.



Select True or False for each statement about the graph.

	True	False
Point A represents the total cost of electricity when operating the business for 6 hours.	<input type="checkbox"/>	<input type="checkbox"/>
The total cost of electricity is \$8 when operating the business for 80 hours.	<input type="checkbox"/>	<input type="checkbox"/>
The total cost of electricity is \$10 when operating the business for 1 hour.	<input type="checkbox"/>	<input type="checkbox"/>

- 11.** Determine whether each statement is true for all cases, true for some cases, or not true for any case.

	True for all cases	True for some cases	Not true for any cases
Two vertical angles form a linear pair.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
If two angles are supplementary and congruent, then they are right angles.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
The sum of two adjacent angles is 90° .	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
The measure of an exterior angle of a triangle is greater than every interior angle of the triangle.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

- 12.** David uses $\frac{1}{2}$ cup of apple juice for every $\frac{1}{4}$ cup of cranberry juice to make a fruit drink.

Enter the number of cups of apple juice David uses for 1 cup of cranberry juice.

	/	/	/	
•	•	•	•	•
0	0	0	0	0
1	1	1	1	1
2	2	2	2	2
3	3	3	3	3
4	4	4	4	4
5	5	5	5	5
6	6	6	6	6
7	7	7	7	7
8	8	8	8	8
9	9	9	9	9

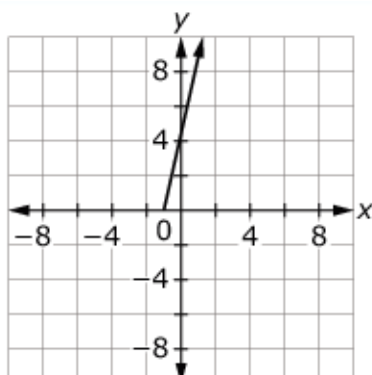
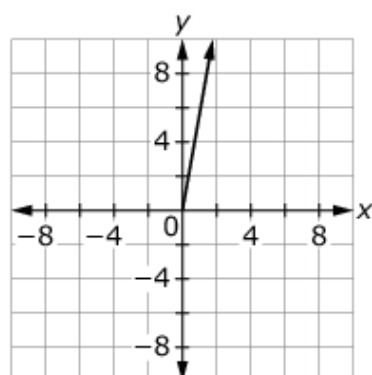
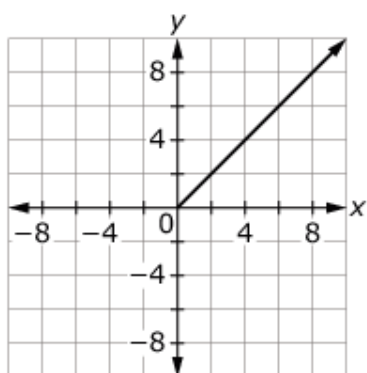
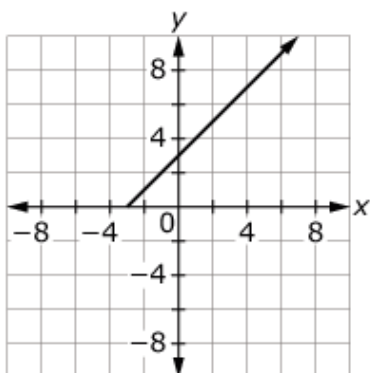
- 13.** Aimee has \$10 to spend on school supplies. The following table shows the price of each item in the school store. No sales tax is charged on these items.

Item	Price
Eraser	\$0.89
Folder	\$1.29
Notebook	\$2.35
Pen	\$0.70

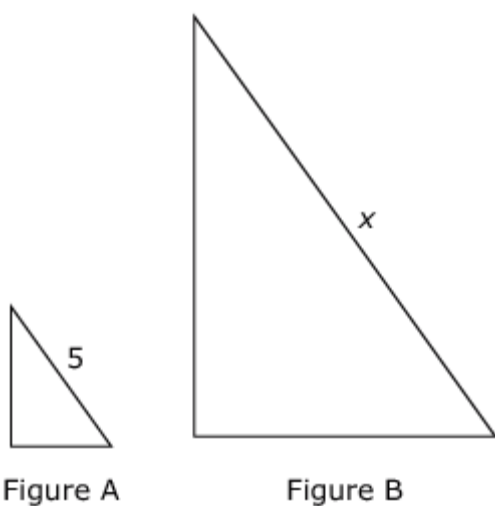
Determine if Aimee can buy the combination of items with her \$10. Select Yes or No for each combination of items.

	Yes	No
5 folders and 5 pens	<input type="checkbox"/>	<input type="checkbox"/>
6 pens and 6 erasers	<input type="checkbox"/>	<input type="checkbox"/>
1 pen and 4 notebooks	<input type="checkbox"/>	<input type="checkbox"/>
3 folders and 7 erasers	<input type="checkbox"/>	<input type="checkbox"/>
4 folders and 2 notebooks	<input type="checkbox"/>	<input type="checkbox"/>

14. Select **all** the graphs that show a proportional relationship between x and y .



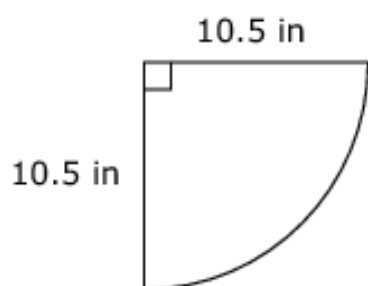
- 15.** A scale factor of 3.5 maps Figure A unto Figure B.



Enter the value of x .

	/	/	/	
•	•	•	•	•
0	0	0	0	0
1	1	1	1	1
2	2	2	2	2
3	3	3	3	3
4	4	4	4	4
5	5	5	5	5
6	6	6	6	6
7	7	7	7	7
8	8	8	8	8
9	9	9	9	9

- 16.** A corner shelf is $\frac{1}{4}$ of a circle and has a radius of 10.5 inches.



Enter the area of the shelf in square inches. Round your answer to the nearest tenth.

	/	/	/	
•	•	•	•	•
0	0	0	0	0
1	1	1	1	1
2	2	2	2	2
3	3	3	3	3
4	4	4	4	4
5	5	5	5	5
6	6	6	6	6
7	7	7	7	7
8	8	8	8	8
9	9	9	9	9

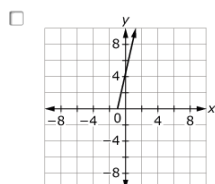
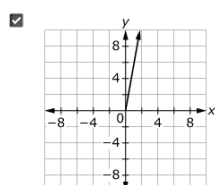
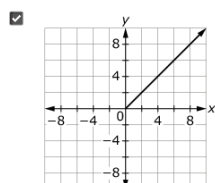
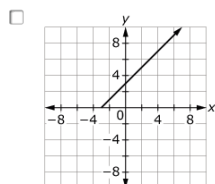
Answer Key

1. $5\frac{1}{3}$
2. \$3.75
3. A
4. 36.8
5. $\frac{1}{6}$
6. Yes, Yes, Yes, No
7. No, No, No, Yes, Yes, No
8. D
9. $r = 12$, $y = 12x$
10. True, False, True
- 11.

	True for all cases	True for some cases	Not true for any cases
Two vertical angles form a linear pair.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
If two angles are supplementary and congruent, then they are right angles.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
The sum of two adjacent angles is 90° .	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
The measure of an exterior angle of a triangle is greater than every interior angle of the triangle.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

12. 2 cups
13. Yes, Yes, No, No, Yes

14.



15. 17.5

16. 86.6 square inches

3rd

4th

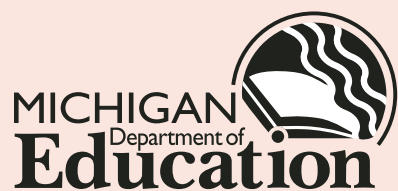
5th

6th

7th

8th

FS



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