

Mathematics Sample Test Booklet 2018

Paper-Pencil Format
Student Version, High School

This test booklet contains several different types of problems as shown below. Each sample shows what a certain type of problem looks like in the test booklet. Respond to each problem in your answer booklet. Let's practice!

Sample A – Multiple Choice:

Exactly how many sides does an octagon have?

- A. 5
- B. 6
- C. 7
- D. 8

Sample B – Multiple-select Response:

Select **all** numbers that are solutions to the inequality $w > 7$.

- A. 2
- B. 4
- C. 6
- D. 8
- E. 9

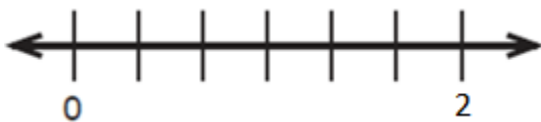
Sample C – Table Response:

Decide whether each equation is true. Select Yes or No for each equation.

		Yes	No
a.	$6w + w = 7w$	(Y)	(N)
b.	$15(2) = 30$	(Y)	(N)
c.	$4.5 \div 1 = 3.5$	(Y)	(N)

Sample D – Short Response:

Draw a point on the number line where the number $\frac{2}{3}$ is located.



Sample E – Answer Box:

Enter the sum: $\frac{2}{5} + \frac{4}{5} =$


This table shows how the sample problems on page 2 should be completed in the answer booklet.


SAMPLES

A A B C

B A B C
 Select all that apply.

C *a* N
b N
c Y

D 

E 
 Write your answer in the box shown above.

Mathematics

High School

Sample Booklet

Read each problem carefully and follow the directions. You may do your work in this test booklet, but you must mark your answers in the answer booklet.

- 1.** Approximately 7.5×10^5 gallons of water flow over a waterfall each second. There are 8.6×10^4 seconds in 1 day. Select the approximate number of gallons of water that flow over the waterfall in 1 day.

A. 6.45×10^{21}

B. 6.45×10^{20}

C. 6.45×10^{10}

D. 6.45×10^9

- 2.** Consider this equation.

$$c = ax - bx$$

Joseph claims that if a , b , and c are non-negative integers, then the equation has exactly one solution for x .

Select **all** cases that show Joseph's claim is **incorrect**.

A. $a - b = 1, c = 0$

B. $a = b, c \neq 0$

C. $a = b, c = 0$

D. $a - b = 1, c \neq 1$

E. $a \neq b, c = 0$

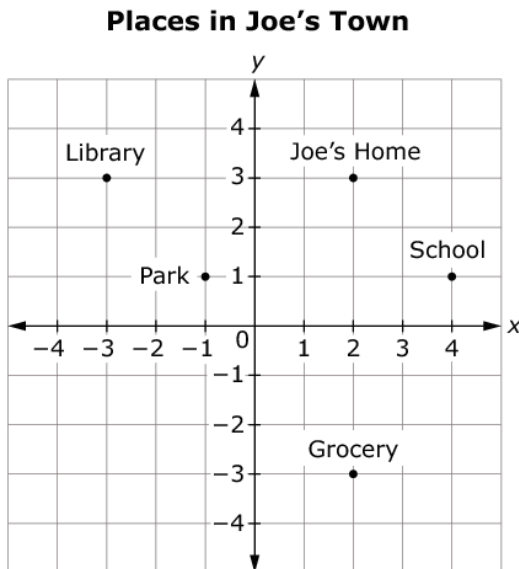
3. For each number, indicate whether it is rational or irrational.

	Rational	Irrational
a. $\frac{4}{7}$	(R)	(I)
b. $\sqrt{30}$	(R)	(I)
c. $\frac{21}{\sqrt{4}}$	(R)	(I)
d. π	(R)	(I)
e. -27	(R)	(I)

4. Determine whether each statement is true for all cases (A), true for some cases (S), or not true for any case (N).

	All Cases (A)	Some Cases (S)	Not True (N)
a. Two vertical angles form a linear pair.	(A)	(S)	(N)
b. If two angles are supplementary and congruent, then they are right angles.	(A)	(S)	(N)
c. The sum of two adjacent angles is 90° .	(A)	(S)	(N)
d. The measure of an exterior angle of a triangle is greater than every interior angle of the triangle.	(A)	(S)	(N)

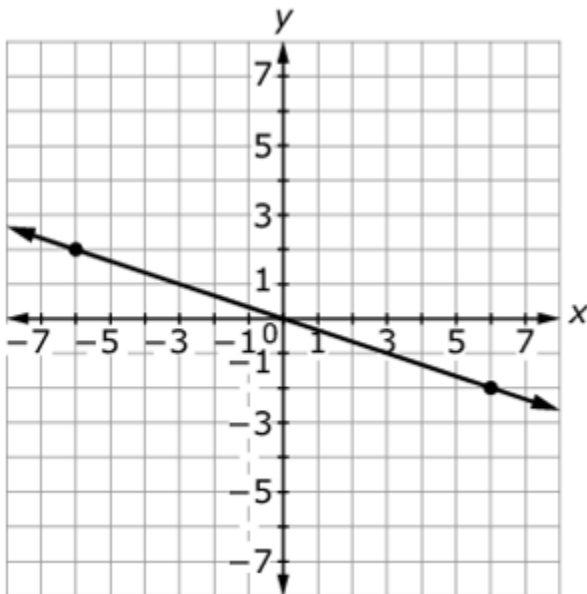
5. The points show different locations in Joe's town. Each unit represents 1 mile.



What is the shortest distance, in miles, between Joe's home and the park? Round your answer to the nearest tenth.

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

7. Consider this graph of a line.



What is an equation for the line?

8. All students at a school answered Yes or No to the two survey questions shown.
- Do you have a cell phone? Yes No
 - Do you have an MP3 player? Yes No

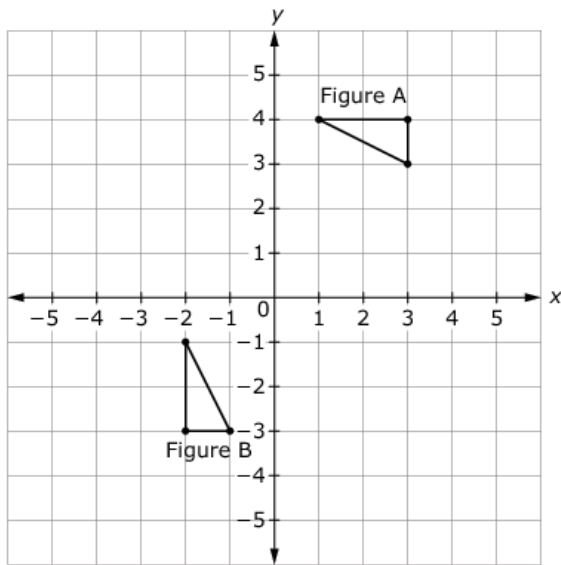
The same students responded to both questions. Complete the two-way frequency table to show the correct totals for the given data. You must complete **all** five cells of the table for a full credit response.

	MP3 Player	No MP3 Player	Total
Cell Phone	57	122	
No Cell Phone	30	65	
Total			

9. Coffee costs \$2.00 per pound at a coffee shop.

Draw a ray that shows the proportional relationship between the number of pounds of coffee purchased and the total cost.

10. Two figures are shown on the coordinate grid.



Show that Figure A and Figure B are congruent by describing a sequence of basic transformations that maps Figure A onto Figure B. In your response, be sure to identify the transformations in the order they are performed.