

Name \_\_\_\_\_

# Minnesota Comprehensive Assessments-Series II

Mathematics Item Sampler  
Grade 6

Minnesota



# Mathematics Test — Segment 1

1

- Deidre folds about 78 shirts in 1 hour at work. She works 19 hours each week. Which is closest to the number of shirts Deidre folds per week?
  - 100
  - 560
  - 1,600
  - 11,200
- One pound is approximately 0.454 kilograms. What is 0.454 rounded to the nearest tenth?
  - 0.4
  - 0.45
  - 0.453
  - 0.5
- A school bought 38 new computers. Each computer cost \$749 including tax. What is the total amount of money spent on the computers?
  - \$711
  - \$787
  - \$8,239
  - \$28,462
- Breanna had a piece of yarn 19 inches long. She cut it into 4 pieces exactly the same size. What was the length of each piece of yarn?
  - $4\frac{3}{10}$  inches
  - $4\frac{3}{4}$  inches
  - 15 inches
  - 23 inches

5. A coach paid a total of \$175 for 14 baseball uniforms. What was the price of each uniform?

- A. \$8.00
- B. \$12.50
- C. \$12.70
- D. \$189.00

6. Daniel drove 893.2 miles in 10 days. He drove the same number of miles each day. How many miles did Daniel drive each day?

- A. 0.8932
- B. 8.932
- C. 89.32
- D. 8,932

Use the table below to answer question 7.

Heights

Name	Height (in inches)
Marcus	$67\frac{3}{8}$
Shea	$61\frac{1}{4}$

7. How much taller is Marcus than Shea?

- A.  $6\frac{1}{8}$  in.
- B.  $6\frac{1}{4}$  in.
- C.  $6\frac{1}{2}$  in.
- D.  $7\frac{1}{8}$  in.

8. Evelyn rode her bike  $3\frac{1}{2}$  miles on Monday. On Wednesday, she rode  $2\frac{1}{4}$  miles. On Saturday, she rode  $5\frac{1}{8}$  miles. How many miles did Evelyn ride in the 3 days?

- A.  $10\frac{3}{16}$
- B.  $10\frac{3}{14}$
- C.  $10\frac{3}{8}$
- D.  $10\frac{7}{8}$

9. What is the value of  $4 \times 5 - 6 \times 3$ ?

- A. -12
- B. 2
- C. 42
- D. 78

10. Leo rides his bike 6 miles a week. Tony rides his bike 4 miles a week. Which expression could be used to calculate how many more miles Leo rides than Tony in 8 weeks?

- A.  $(6 + 4) \times 8$
- B.  $(6 \times 8) + (4 \times 8)$
- C.  $(6 \times 8) - (4 \times 8)$
- D.  $(6 \times 4) \times 8$

Please fill in the grid with your answer to question 11 on page 2 of your answer book.

Use the expression below to answer question 11.

$$\frac{9 + 5 \times (8 \times 0.5) - 2}{3}$$

11. What is the value of the expression?

Please fill in the grid with your answer to question 12 on page 2 of your answer book.

Use the table below to answer question 12.

**Victor's Monthly Bill**

Expenses	Fractional Part of Paycheck
Rent	$\frac{1}{3}$
Car Payment	$\frac{1}{5}$
Food	$\frac{1}{5}$
Household Bills	$\frac{1}{10}$

12. The table above shows 4 of Victor's monthly bills. What fractional part of his paycheck does he spend on these 4 bills?

**This is the end of Segment 1.**

Check your work, then  
**SEAL** Segment 1.



## Segment 2

Your teacher will tell you when to begin this segment.

You **MAY** use a calculator for this segment.



## Mathematics Test — Segment 2

Use the table below to answer question 13.

**Distance To Work**

Name	Distance to Work (in miles)
Robbi	13
Tomás	1.4
Veronica	4.6
Marina	65

- 2
13. Which list shows the distance to work of four employees in order from least to greatest?
- A. 1.4 13 4.6 65
  - B. 1.4 4.6 13 65
  - C. 13 1.4 4.6 65
  - D. 13 1.4 65 4.6



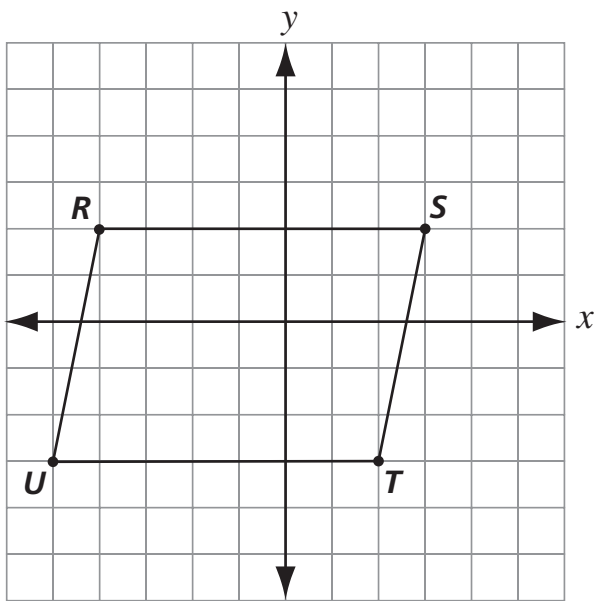
Use the number line below to answer question 14.



14. Which number is represented by Point  $K$  on the number line?

- A. 6.984
- B. 7.06
- C. 7.08
- D. 7.09

Use the grid below to answer question 15.



15. What is the area of parallelogram  $RSTU$  in the grid?
- A. 30 square units
  - B. 35 square units
  - C. 42 square units
  - D. 48 square units
16. What is the greatest common factor of 18 and 24?
- A. 2
  - B. 3
  - C. 6
  - D. 8

Use the table below to answer question 17.

**BURGER HUT'S DELIVERIES**

Type of Food	Delivered
Lettuce	Every 3 days
Potatoes	Every 6 days
Burger Patties	Every 15 days

17. The Burger Hut receives regular deliveries of food. All the types of food listed in the table were delivered today. In how many days will the Burger Hut receive another delivery of all 3 items on the same day?
- A. 15
  - B. 30
  - C. 45
  - D. 60

18. Maintenance on Mr. Cook's new truck was done as follows:

- Each 3,000 miles his truck had an oil change.
- Each 40,000 miles his truck had a tune-up.

Mr. Cook's truck now has 100,000 miles on it. How many times has he had maintenance done on the truck since he bought it?

- A. 5
- B. 14
- C. 35
- D. 58

19. Sam bought the following items.

- 2 shirts for \$9.99 each
- 1 pair of pants for \$12.99
- 3 pairs of socks for \$1.56 each

What is the total price for the items bought?

- A. \$24.54
- B. \$27.66
- C. \$34.53
- D. \$37.65

Please write your response to question 20 on page 3 of your answer book.

20. Juice boxes are packaged two different ways.

- A package of 24 boxes costs \$12.98.
- A package of 4 boxes costs \$2.59.

You need 56 juice boxes.

**Part A** Find 2 different possible ways you could purchase the 56 juice boxes and the total cost for each way. Show or explain your work.

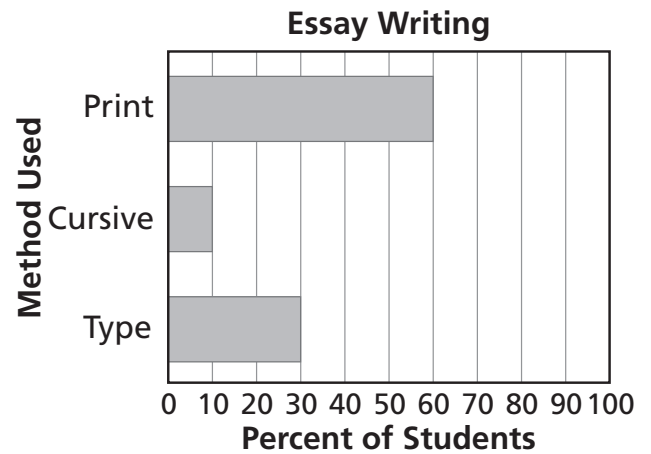
**Part B** Using your answer in part A, what is the price per juice box if you purchase the lower priced combination? Show or explain your work.

**Be sure to show all your work in your answer book.**

21. Ed had 30 comic books. He sold 24 comic books. What percent of his total number of comic books did Ed sell?

- A. 40%
- B. 60%
- C. 67%
- D. 80%

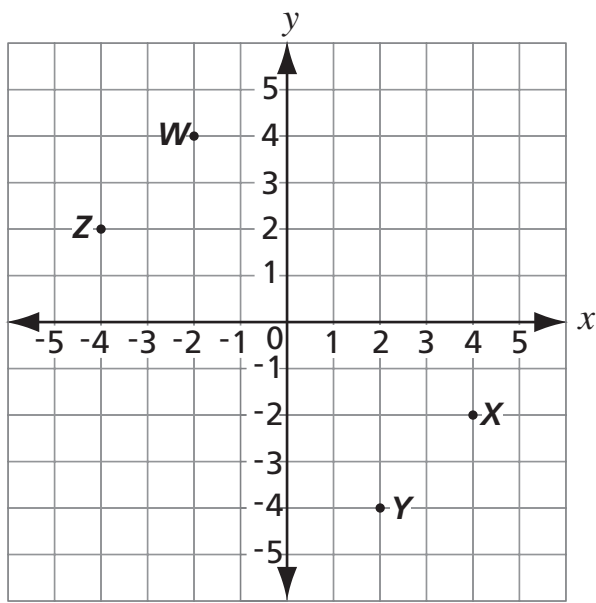
Use the graph below to answer question 22.



22. Ms. Andrews allows her students to print, write in cursive, or type their essays. The graph above shows the percent of students who use each method. Ms. Andrews teaches 150 students. How many students type their essays?

- A. 15
- B. 30
- C. 45
- D. 50

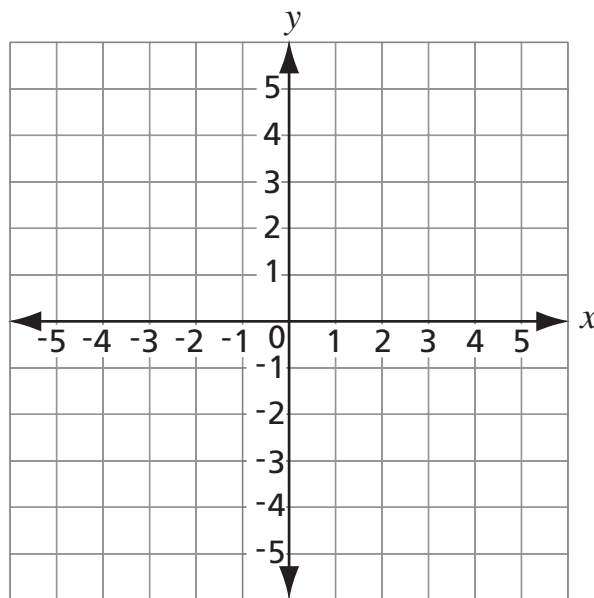
Use the grid below to answer question 23.



23. In the grid above, which point is located at  $(-4, 2)$ ?

- A. Point *W*
- B. Point *X*
- C. Point *Y*
- D. Point *Z*

Use the coordinate grid below to answer question 24.



24. Which list of ordered pairs represents the vertices of a square when plotted?

- A.  $(-4, 4)$   $(3, 4)$   $(3, -4)$   $(-4, -4)$
- B.  $(-4, 4)$   $(3, 3)$   $(3, -3)$   $(-4, -3)$
- C.  $(-4, 4)$   $(3, 4)$   $(3, -3)$   $(-4, -3)$
- D.  $(-4, 4)$   $(4, 4)$   $(4, -3)$   $(-4, -3)$

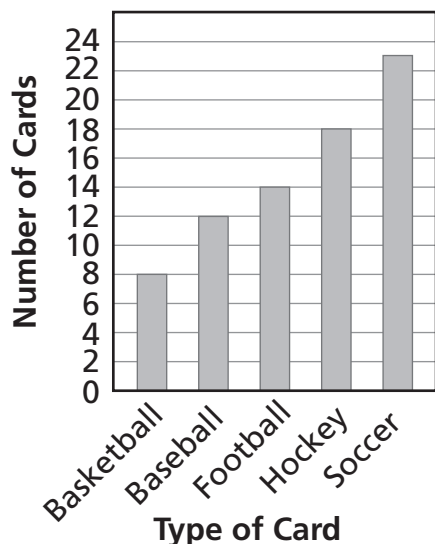
Use the table below to answer question 25.

**Raymond's Trading Cards**

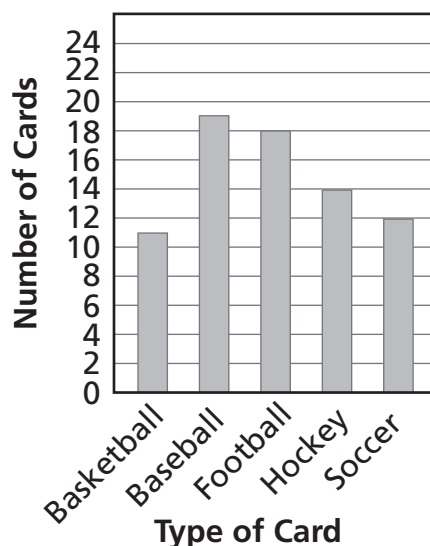
Type of Card	Number of Cards
Basketball	11
Baseball	23
Football	18
Hockey	14
Soccer	12

25. Raymond recorded the number of trading cards he has in the table. Which bar graph correctly displays the information from the table?

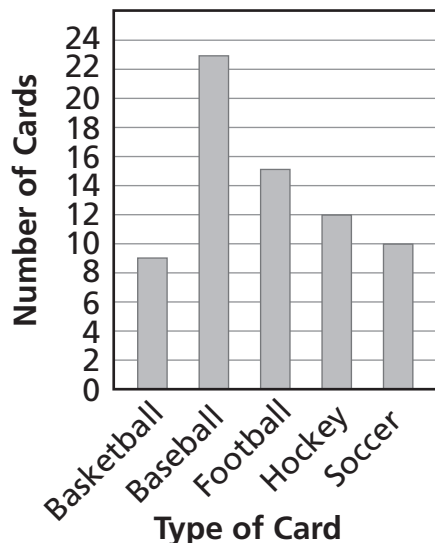
**A. Raymond's Trading Cards**



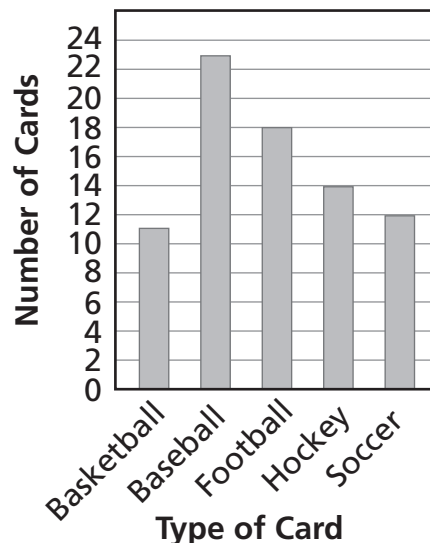
**B. Raymond's Trading Cards**



**C. Raymond's Trading Cards**



**D. Raymond's Trading Cards**



Use the information below to answer question 26.

10 17 12 8 9 7 15 14 6 12

26. Nicole did a survey on the weight of students' backpacks at her middle school. The weights, in pounds, of 10 backpacks are listed above. What is the mean (average) weight, in pounds, of the 10 backpacks?

- A. 10
- B. 11
- C. 12
- D. 13

2



# Mathematics Test — Segment 3

Use the table below to answer question 27.

**Relay Team's Practice Times**

Day	Time (in minutes)
Monday	3.24
Tuesday	3.48
Wednesday	3.89
Thursday	3.39
Friday	3.14

27. The table shows the relay team's practice times. What is the relay team's median practice time?
- A. 0.75 minutes
  - B. 3.39 minutes
  - C. 3.43 minutes
  - D. 3.89 minutes

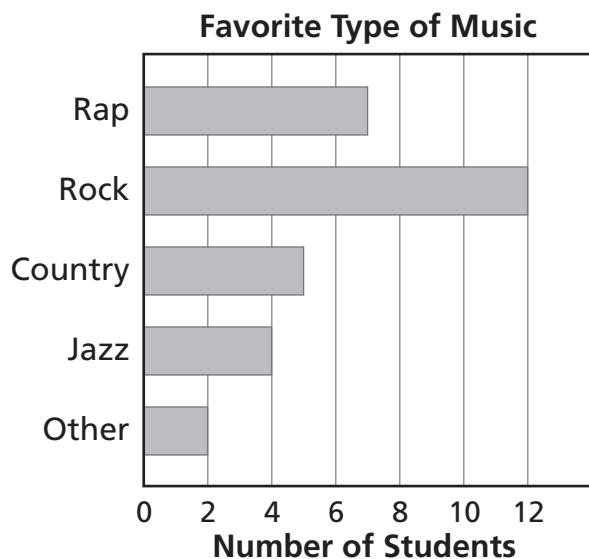
Use the information below to answer question 28.

**Lake Superior Agates**

Mass of Agate
101.9 grams
201.2 grams
199.4 grams
198.3 grams
198.7 grams

28. Some students measured the mass of a Lake Superior agate. The measurements in grams are listed. Which measurement is an outlier for the results?
- A. 101.9
  - B. 201.2
  - C. 199.4
  - D. 198.7

Use the bar graph below to answer question 29.



29. The bar graph shows the favorite type of music for 30 students. A student is chosen at random. What is the probability that the student's favorite type of music is jazz?
- A. 1 out of 4
  - B. 1 out of 5
  - C. 2 out of 15
  - D. 2 out of 30

Use the table below to answer question 30.

**Thanksgiving Day Weather Trends**

Type of Weather	Number of Occurrences
Rain	5
Sleet	3
Snow	2
Clear	8
Overcast	2

30. The table shows what type of weather occurred in Martha's hometown for the last 20 years on Thanksgiving Day. According to this data, what is the probability it will snow in Martha's hometown this Thanksgiving?
- A.  $\frac{8}{20}$
  - B.  $\frac{5}{20}$
  - C.  $\frac{3}{20}$
  - D.  $\frac{2}{20}$

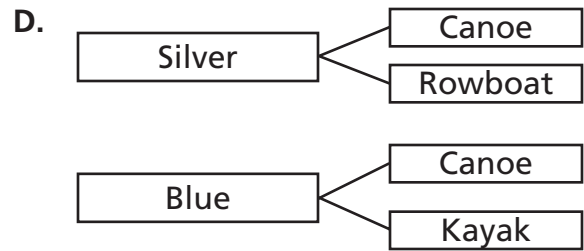
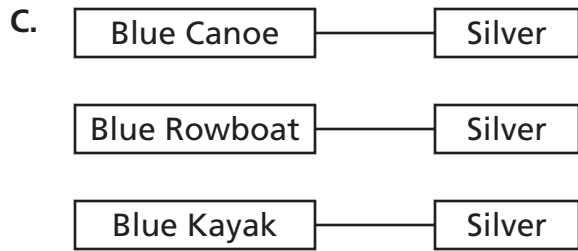
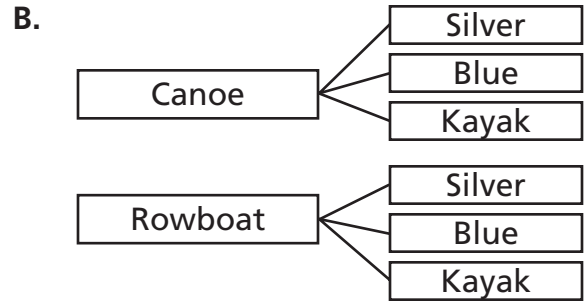
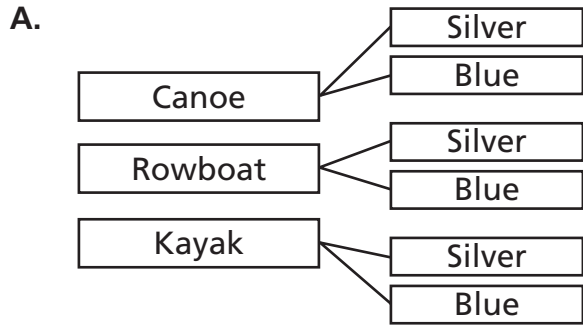
31. Adam has a bowl that contains gumdrops of all the same size. The bowl contains these gumdrops:

- 10 green gumdrops
- 10 red gumdrops
- 10 yellow gumdrops
- 5 purple gumdrops

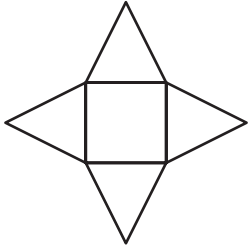
Adam takes one gumdrop from the bowl at random. What is the probability that it will be purple?

- A. 1 out of 4
- B. 1 out of 5
- C. 1 out of 6
- D. 1 out of 7

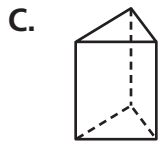
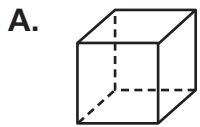
32. Mr. Jones is buying a new boat. He has a choice of a canoe, a rowboat, or a kayak. Each boat comes in silver or blue. Which diagram shows all of the different boats from which Mr. Jones could choose?



Use the net below to answer question 33.

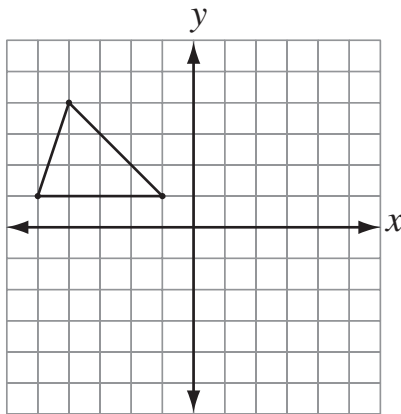


33. Which three-dimensional figure can be created from the net shown?

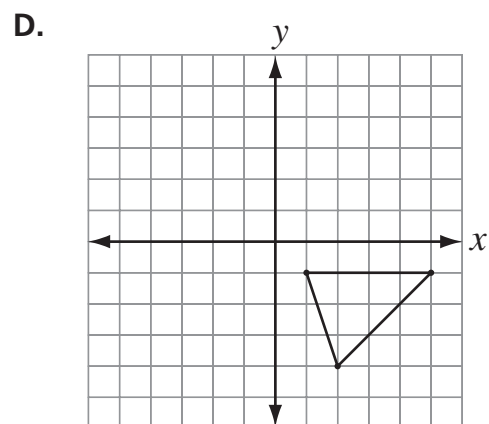
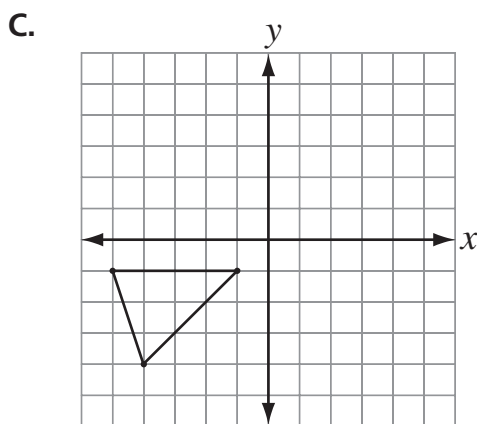
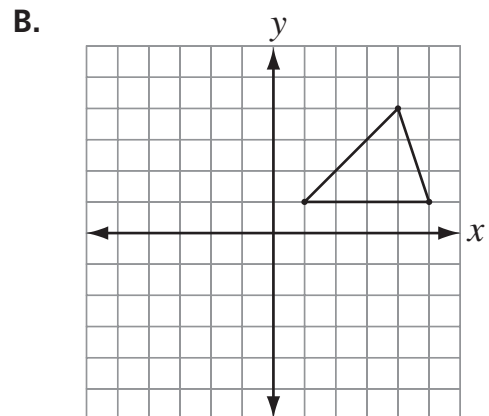
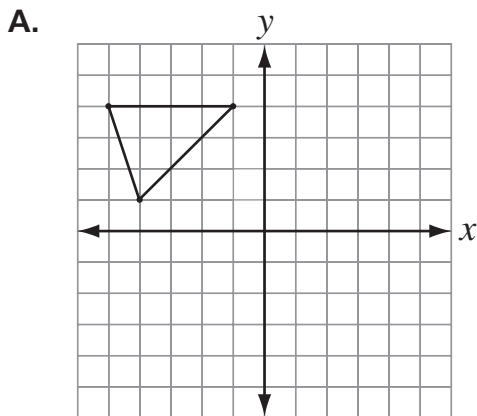


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Use the grid below to answer question 34.

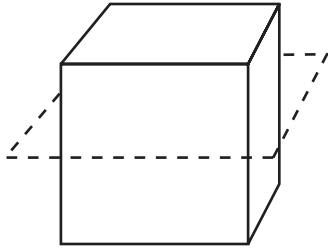


34. A triangle is marked on the grid above. Which shows the triangle as a reflection (flip) across line  $y$ ?

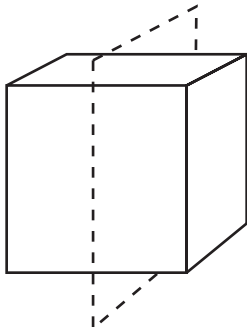


35. Which figure does **not** show a plane of symmetry?

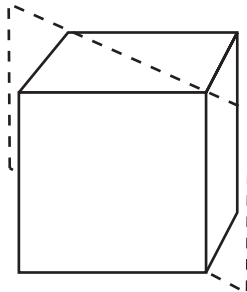
A.



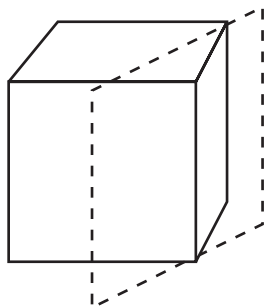
B.



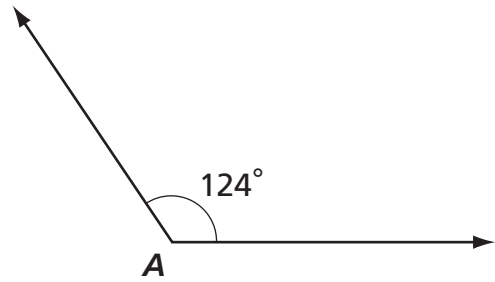
C.



D.



Use the figure below to answer question 36.

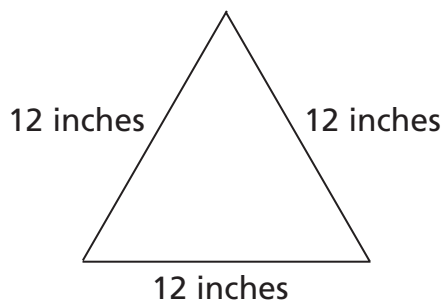


36. Angle  $A$  measures  $124^\circ$ . What is the measure of an angle that is supplementary to angle  $A$ ?

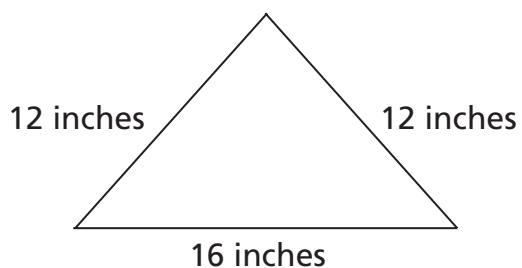
- A.  $34^\circ$
- B.  $56^\circ$
- C.  $66^\circ$
- D.  $236^\circ$

37. Which set of measurements could be the lengths of the sides of a triangle that is isosceles but **not** equilateral?

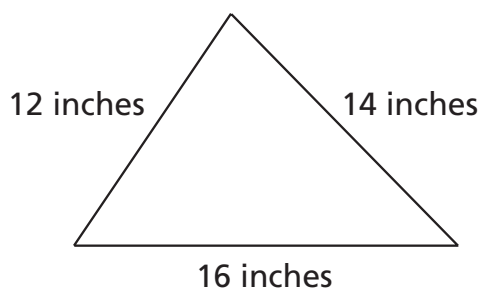
A.



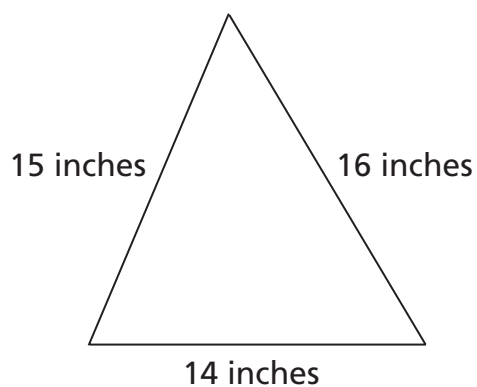
B.



C.



D.

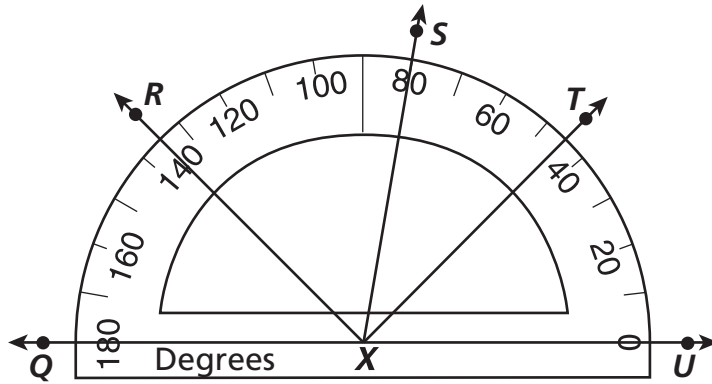


38. Marianna has a plastic hoop with a diameter of 3 feet. Which is closest to the circumference of Marianna's hoop? (Use 3.14 for  $\pi$ )

- A. 4.71 feet
- B. 7.07 feet
- C. 9.42 feet
- D. 28.26 feet



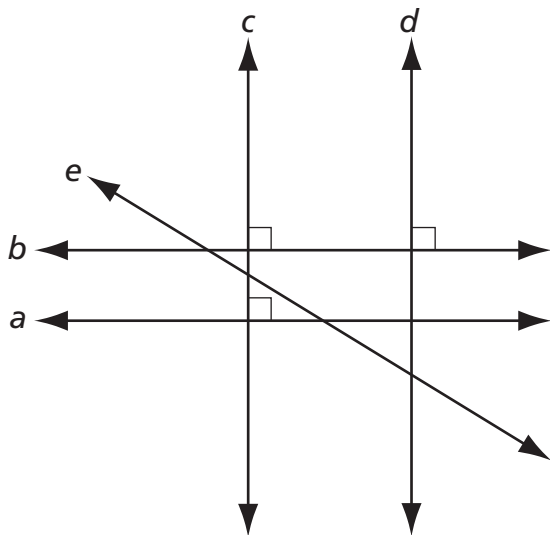
Use the protractor below to answer question 39.



39. Which angle appears to measure  $80^\circ$ ?

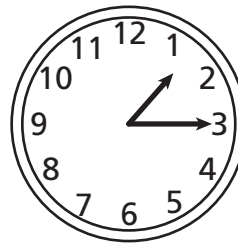
- A.  $\angle SXT$
- B.  $\angle QXS$
- C.  $\angle RXS$
- D.  $\angle SXU$

Use the diagram below to answer question 40.



40. Which pair of lines is parallel?
- A. line *b* and line *d*
  - B. line *c* and line *e*
  - C. line *e* and line *d*
  - D. line *a* and line *b*
41. Stephanie has 12 yards of string. What is the largest number of 1-foot pieces of string that Stephanie can cut from the string?
- A. 12
  - B. 24
  - C. 36
  - D. 48

Use the picture below to answer question 42.



42. Rudy left his house at the time shown on the clock. He walked for  $\frac{1}{2}$  hour and stopped at the store for  $\frac{1}{4}$  hour. It took him another  $\frac{1}{2}$  hour to return home. What time did Rudy arrive home?
- A. 1:30 p.m.
  - B. 2:15 p.m.
  - C. 2:30 p.m.
  - D. 3:30 p.m.
43. What is the prime factorization of 162?
- A.  $2 \times 3 \times 3 \times 3 \times 3$
  - B.  $2 \times 4 \times 4 \times 4$
  - C.  $2 \times 9 \times 9 \times 9 \times 9 \times 9 \times 9 \times 9 \times 9$
  - D.  $2 \times 9 \times 9$

Please write your response to question 44 on page 6 of your answer book.

Use the table below to answer question 44.

**Daily High and Low Temperatures  
(in degrees Fahrenheit)**

Day	High	Low
Monday	91°	79°
Tuesday	93°	79°
Wednesday	79°	63°
Thursday	85°	65°
Friday	88°	68°

44. The table shows daily high and low temperatures recorded for 5 days.

**Part A** What was the mean (average) high temperature for the 5 days? Show or explain your work.

**Part B** What was the median low temperature for the 5 days? Show or explain your work.

**Part C** What was the mode for the 10 temperatures in the table? Show or explain your answer.

3

**Be sure to show all your work in your answer book.**

# Grade 6 Teacher's Guide

## MCA-II Item Sampler Answer Key

### Grade 6 Math

Item #	Correct Answer	Item Type	Calculator Designation	Strand	Sub-Strand	Benchmark	Cognitive Level
1	C	MC	NC	II	A	2	A
2	D	MC	NC	II	A	2	A
3	D	MC	NC	II	B	4	A
4	B	MC	NC	II	B	5	A
5	B	MC	NC	II	B	5	A
6	C	MC	NC	II	B	6	A
7	A	MC	NC	II	B	7	A
8	D	MC	NC	II	B	7	A
9	B	MC	NC	III	B	1	B
10	C	MC	NC	III	B	1	B
				I	A	3	
11	9	GR	NC	III	B	1	B
12	5/6	GR	NC	II	B	7	A
13	B	MC	CL	II	A	1	A
14	B	MC	CL	II	A	1	B
15	B	MC	CL	V	C	3	B
16	C	MC	CL	II	B	2	B
17	B	MC	CL	II	B	2	B
18	C	MC	CL	II	B	3	B
				I	A	4	
19	D	MC	CL	II	B	3	B
20	See Annotation	CR	CL	II	B	3	C
				I	A	2	
21	D	MC	CL	III	B	8	A
22	C	MC	CL	III	B	8	B
				I	A	3	
23	D	MC	CL	IV	A	1	A
24	C	MC	CL	IV	A	1	A
25	D	MC	CL	IV	A	1	A
26	B	MC	CL	IV	A	2	B
27	B	MC	CL	IV	A	2	B
28	A	MC	CL	IV	A	3	A
29	C	MC	CL	IV	B	1	B
30	D	MC	CL	IV	B	1	A
31	D	MC	CL	IV	B	2	A
32	A	MC	CL	IV	B	2	B
				I	A	5	
33	B	MC	CL	V	A	1	A
34	B	MC	CL	V	A	2	A
35	D	MC	CL	V	A	3	A
36	B	MC	CL	V	B	1	A
37	B	MC	CL	V	B	2	B
38	C	MC	CL	V	B	3	B
				I	A	1	
39	D	MC	CL	V	B	4	A
40	D	MC	CL	V	B	4	A
41	C	MC	CL	V	C	1	B
42	C	MC	CL	V	C	2	B
43	A	MC	CL	II	B	1	A
44	See Annotation	CR	CL	IV	A	2	B
				I	A	4	