

GRADE 7 SAMPLE ITEMS

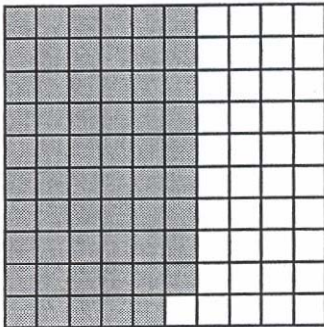
1. Place Value - MC

Which means the same as 39,000?

- 3.9×10^4
- 3.9×10^3
- 39×10^5
- 39×10^4

2. Pictorial Representation of Numbers - MC

What percent of the grid is shaded?



Each $\square = 0.01$

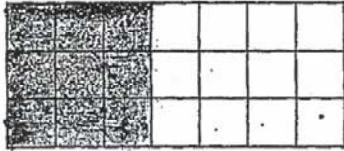
- 69%
- 59%
- 58%
- 48%

2. Pictorial Representation of Numbers - OE

S-1 Shade in $\frac{3}{7}$ of this shape.

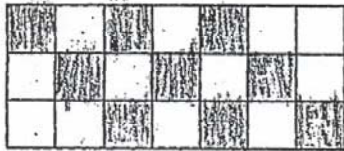


S1A Shade in $\frac{3}{7}$ of this shape.



1

S1B Shade in $\frac{3}{7}$ of this shape.



1

S1C Shade in $\frac{3}{7}$ of this shape.



1

3. Equivalent Fractions, Decimals and Percents - MC

A basketball player made $\frac{9}{20}$ of the field goals attempted. What percent names the same amount?

- 20%
- 36%
- 40%
- 45%

4. Order, Magnitude and Rounding of Numbers - MC

The table below shows the numbers of packages sent by a shipping company over a five-day period.

Shipping Log

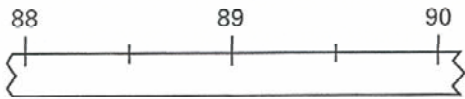
Day	Number of Packages
Monday	324,883
Tuesday	413,443
Wednesday	403,132
Thursday	314,590
Friday	423,062

Which day had a **greater** number of packages sent than Tuesday?

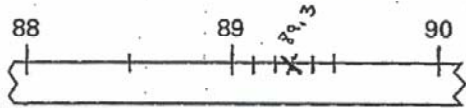
- Monday
- Wednesday
- Thursday
- Friday

4. Order, Magnitude and Rounding of Numbers - OE

S-2 The decibel level at a recent concert was 89.3. Draw an "x" on the scale that shows 89.3.

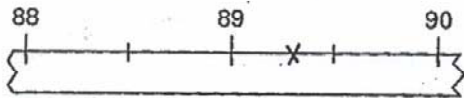


S2A The decibel level at a recent concert was 89.3. Draw an "x" on the scale that shows 89.3.



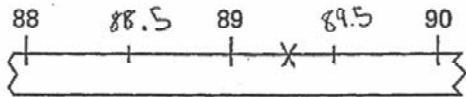
1

S2B The decibel level at a recent concert was 89.3. Draw an "x" on the scale that shows 89.3.



1

S2C The decibel level at a recent concert was 89.3. Draw an "x" on the scale that shows 89.3.



1

5. Models for Operations - MC

A parade had a marching band made up of 32 rows, with 15 members in each row.

Which number sentence could be used to determine how many members were in the band altogether?

- $32 \div 15 = \square$
- $32 - 15 = \square$
- $32 \times 15 = \square$ *
- $32 + 15 = \square$

5. Models for Operations - OE

Write a story problem that can be solved using the number sentence

$$623 - 49.8 = \square.$$

7. Computation with Whole Numbers and Decimals - GR

$$1894 \div 100 =$$

					.		
0	0	0	0	0		0	0
1	1	1	1	1		1	1
2	2	2	2	2		2	2
3	3	3	3	3		3	3
4	4	4	4	4		4	4
5	5	5	5	5		5	5
6	6	6	6	6		6	6
7	7	7	7	7		7	7
8	8	8	8	8		8	8
9	9	9	9	9		9	9

8. Computation with Fractions and Integers - MC

$$3 + ^{-}5 =$$

- 8
- 2
- 2
- 8

9. Solve Word Problems - MC

A shelf in Tricia's garage was 8 feet high. Tricia could reach $6\frac{1}{4}$ feet up. How much farther did Tricia need to reach to touch the shelf?

- $1\frac{3}{4}$ feet
- $2\frac{1}{2}$ feet
- $2\frac{3}{4}$ feet
- $14\frac{1}{4}$ feet

9. Solve Word Problems - OE

S-3 José needed 48 sodas for his class picnic. He could either buy four 12-packs for \$2.79 each or two 24-packs for \$5.80 each.

Which would cost **less**? _____

Show your work or explain how you found your answer.

S31 José needed 48 sodas for his class picnic. He could either buy four 12-packs for \$2.79 each or two 24-packs for \$5.80 each.

Which would cost less? 12 pack

Show your work or explain how you found your answer.

you would multiply 4×12 and then multiply the answer to that by \$2.79 which equals \$135.96. Then you would take 2×24 and multiply the answer to that by \$5.80 which equals \$278.40 so you can see that the 12 packs would cost less.

0

10. Numerical Estimation Strategies - MC

To estimate the sum of \$2.95 and \$17.93, Mason added $\$3 + \18 . Would Mason's estimate be more or less than the actual sum?

- MORE, because Mason rounded both numbers up
- MORE, because Mason rounded both numbers down
- LESS, because Mason rounded both numbers up
- LESS, because Mason rounded both numbers down

11. Estimating Solutions to Problems - MC

Four people equally shared the cost of a \$282.55 graduation present. Which of the following is a **reasonable** amount for how much each person spent?

- A little less than \$60
- A little more than \$60
- A little less than \$70
- A little more than \$70 *

11. Estimating Solutions to Problems - OE

S-5 Amy wants to estimate 11% of \$9.11.

What is a good estimate of the answer? _____

Show your work or explain how you made your estimate. _____

S5A Amy wants to estimate 11% of \$9.11.

What is a good estimate of the answer? .99

Show your work or explain how you made your estimate. _____

① $9.11 = 9.00$

② $10\% = .9 \rightarrow 9.00$

③ $1\% = .09 \rightarrow 9.00$

④ $.9 + .09 = .99$

2

5B Amy wants to estimate 11% of \$9.11.

What is a good estimate of the answer? .9

Show your work or explain how you made your estimate. I made 11%

10% and made \$9.11 \$9.00. Then I just moved the decimal point.

2

S51 Amy wants to estimate 11% of \$9.11.

What is a good estimate of the answer? 80¢

Show your work or explain how you made your estimate.

$$\begin{array}{r} 81 \\ .11 \overline{)9.00} \\ \underline{-88} \\ 20 \\ \underline{11} \\ 9 \end{array}$$

0

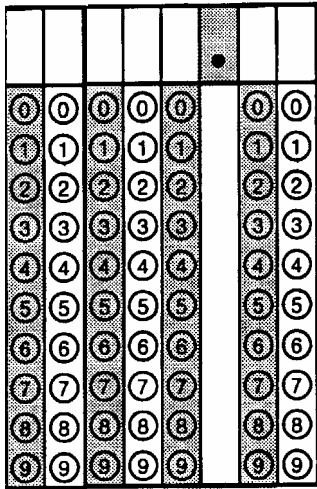
12. Ratios and Proportions - MC

In Mr. Simpson's apple orchard there are 5 green apple trees to every 6 red apple trees. He has 330 green apple trees. How many red apple trees does Mr. Simpson have?

- 55
- 66
- 275
- 396

13. Computation with Percents - GR

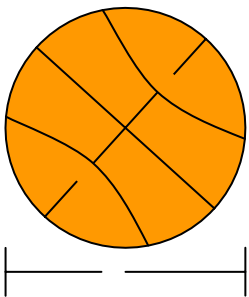
A dress shop owner put 75% of his 160 items on sale. How many items were on sale?



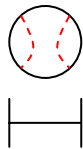
15. Approximating measures - MC

Look at the baseball and basketball below.

Basketball



Baseball

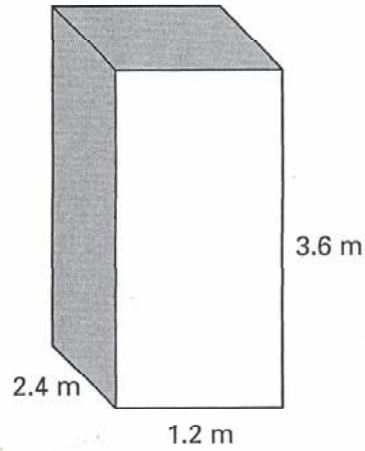


The diameter of the baseball is 7 centimeters. Which is the **best** approximation of the **diameter**, in centimeters, of the basketball?

- 14
- 21
- 28
- 35

16. Customary and Metric Measures - OE

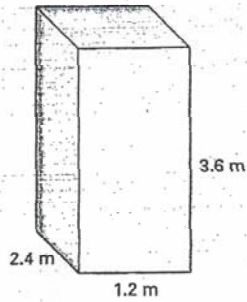
This picture shows a rectangular prism. Based on the given dimensions, what is the volume of the rectangular prism?



Volume: _____

Show your work or explain how you found your answer.

S5A This picture shows a rectangular prism. Based on the given dimensions, what is the volume of the rectangular prism?



Volume: 10.368 m^3

Show your work or explain how you found your answer.

$$\begin{array}{r} 2.4 \\ \times 1.2 \\ \hline 48 \\ 240 \\ \hline 288 \\ \times 3.6 \\ \hline 1728 \\ + 8640 \\ \hline 10.368 \end{array}$$

2

16. Customary and Metric Measures - MC

Which of these is the **best** unit to measure the length of a person's bed?

- Liters
- Centimeters
- Millimeters
- Kilometers

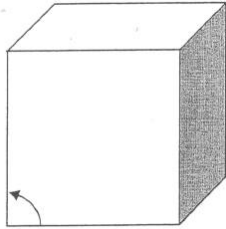
16. Customary and Metric Measures - GR

Karen filled a pitcher with 1800 milliliters of water. How many liters is that?

					.		
0	0	0	0	0		0	0
1	1	1	1	1		1	1
2	2	2	2	2		2	2
3	3	3	3	3		3	3
4	4	4	4	4		4	4
5	5	5	5	5		5	5
6	6	6	6	6		6	6
7	7	7	7	7		7	7
8	8	8	8	8		8	8
9	9	9	9	9		9	9

17. Geometric Shapes and Properties - MC

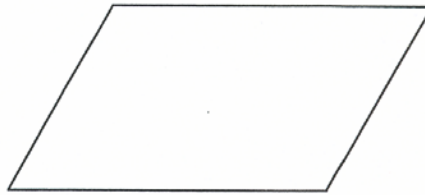
Identify the type of angle indicate below.



- Right angle
- Isosceles angle
- Acute angle
- Obtuse angle

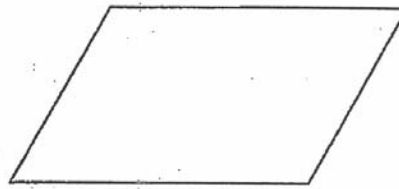
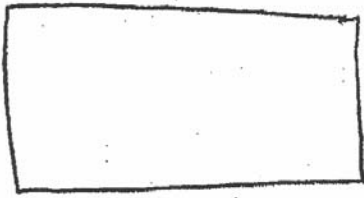
17. Geometric Shapes and Properties - OE

Draw and label 1 trapezoid next to the parallelogram. Write one geometric characteristic that both the trapezoid and the parallelogram have in common.



Parallelogram

S4I Draw and label 1 trapezoid next to the parallelogram. Write one geometric characteristic that both the trapezoid and the parallelogram have in common.



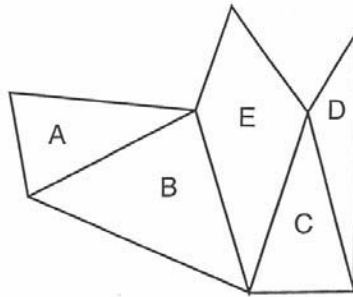
Parallelogram

They are both similar in shape.

0

18. Spatial Relationships - OE

In the figure below, which 2 triangles appear to be **congruent**?

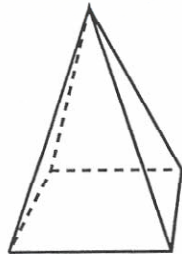


Write the letters of the 2 **congruent** triangles: _____, _____

Explain why you think they are **congruent**.

18. Spatial Relationships - MC

Illana has a pyramid shaped like this.

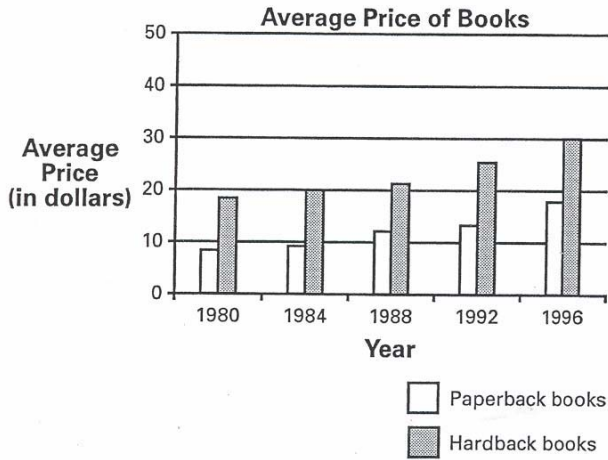


Which of the following shows the view from underneath the pyramid?

-
-
-
-

19. Tables, Graphs and Charts - MC

The graph below shows the comparison between the average price of paperback books and the average price of hardback books for 5 different years.



According to the graph, in which year was the average price of a paperback book \$18?

- 1980
- 1984
- 1992
- 1996

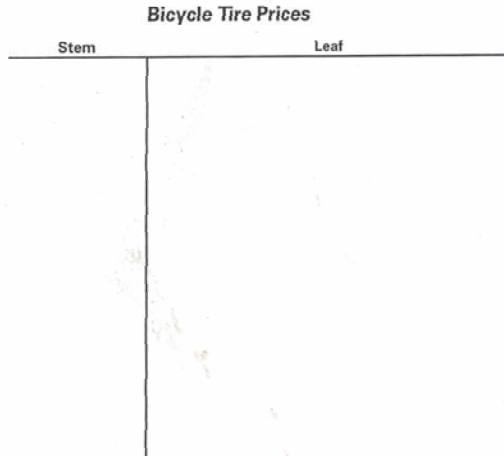
19. Tables, Graphs and Charts - OE

S.7 The table below shows the prices of new bicycle tires.

Bicycle Tire Prices (in dollars)					
39	43	23	34	33	42
29	32	45	34	37	38

art has been reduced to 80% to fit on page.

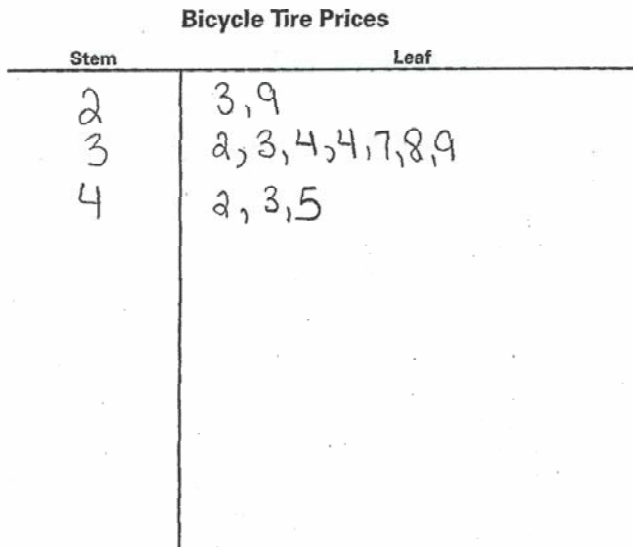
Complete the stem-and-leaf plot to show the same information.



S7A The table below shows the prices of new bicycle tires.

Bicycle Tire Prices (in dollars)					
39	43	23	34	33	42
29	32	45	34	37	38

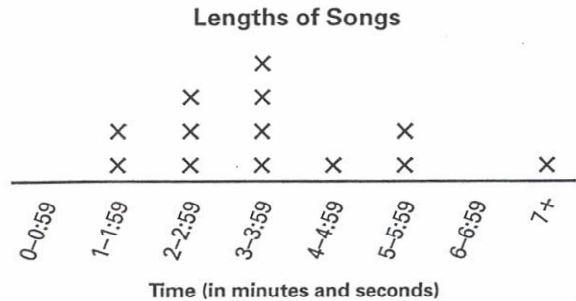
Complete the stem-and-leaf plot to show the same information.



2

20. Statistics and Data Analysis - MC

This line plot shows the length of each song on Amy's new CD.

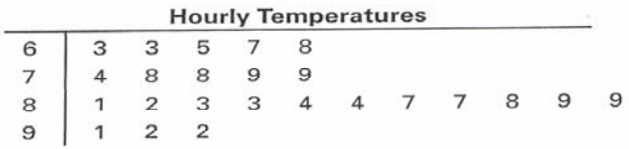


How many songs were from 4 to 6 minutes long?

- 3
- 4
- 5
- 6

20. Statistics and Data Analysis - OE

S-5 This stem-and-leaf plot shows the hourly temperatures during a 24-hour period.



6|3 represents 63°

Loren claimed that for **about** $\frac{1}{2}$ of the day the temperature was over 80°. Based on the data above, is Loren's claim reasonable? _____
 Use the data in the plot to explain why or why not.

S5I This stem-and-leaf plot shows the hourly temperatures during a 24-hour period.

6	3	3	5	7	8					
7	4	8	8	9	9					
8	1	2	3	3	4	4	7	7	8	9
9	1	2	2							

6 | 3 represents 63°

Loren claimed that for about $\frac{1}{2}$ of the day the temperature was over 80°.

Based on the data above, is Loren's claim reasonable? NO

Use the data in the plot to explain why or why not.

No because in half of the day, the highest temp. was 79°

0

20. Statistics and Data Analysis - GR

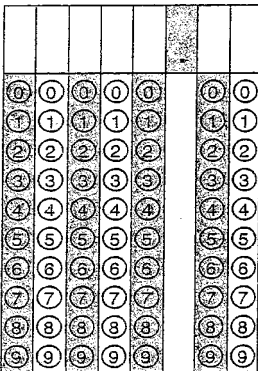
This stem-and-leaf plot shows the number of scooters sold for several months

Scooters Sold

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

1 | 9 represents 19 scooters

Which number is the **mode** in this plot?



S-2 Millie has 10 blocks in a bag. They are either red, blue, or green. **Without looking**, she picked one block out of the bag and then placed it back. She repeated this 50 times. The table shows the results of her experiment.

Blocks Picked

Block	Number of Times Picked
red	20
blue	20
green	10

How many blocks of each color are probably in the bag?

red	
blue	
green	

Show your work or explain how you arrived at your prediction.

S21 Millie has 10 blocks in a bag. They are either red, blue, or green. Without looking, she picked one block out of the bag and then placed it back. She repeated this 50 times. The table shows the results of her experiment.

Blocks Picked

Block	Number of Times Picked
red	20
blue	20
green	10

How many blocks of each color are probably in the bag?

red	20
blue	20
green	10

Show your work or explain how you arrived at your prediction.

I arrived at this prediction because if there was 50 and see picked out these #'s, which equal to 50 that should be it.

0

22. Patterns - MC

220777 MT 005409

These figures rotate in a repeating pattern.



Which figure would be the 13th figure in the pattern?

-
-
-
-

22. Patterns - OE

S-5 These numbers follow a growing pattern.

3, 12, 48, ?, 768, ...

What number is the missing number in the pattern? _____

Explain how you decided which number to write.

S5A These numbers follow a growing pattern:

3, 12, 48, ?, 768, ...

What number is the missing number in the pattern? 192

Explain how you decided which number to write.

Each # is multiplied by 4 ($3 \times 4 = 12$, $12 \times 4 = 48$, $48 \times 4 = 192$, $192 \times 4 = 768$ etc.).

2

S5B These numbers follow a growing pattern.

3, 12, 48, ?, 768, ...

What number is the missing number in the pattern? 192

Explain how you decided which number to write.

I decided to write 192 because I realized that to have 12 after 3 and 48 after 12, the pattern must be ~~x4~~ to multiply 4 by each number, $3 \times 4 = 12$, $12 \times 4 = 48$. Then I multiplied 48 by 4 and got 192. To check my answer I multiplied 192 by 4 and I got 768.

2

3, 12, 48, 7, 768, ...

288

What number is the missing number in the pattern?

Explain how you decided which number to write.

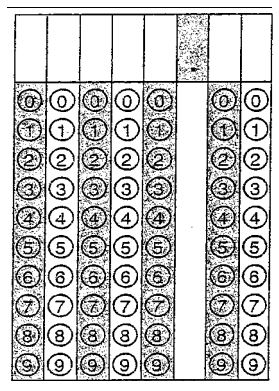
I just guessed I had a 35 but then I just lost myself.

0

23. Algebraic Concepts - GR

What value of x makes this equation true?

$92 = 2x$



23. Algebraic Concepts - MC

$54 - 36 \div 9 =$

- 50
- 18
- 4
- 2

23. Algebraic Concepts - OE

S-6 Reggie found out that 3.7 times as many people attended Saturday night's concert as those who attended Friday night's concert.

Let p represent the number of people who attended Friday night's concert.

Write an expression, using p , that shows the number of people who attended Saturday night's concert.

S6A Reggie found out that 3.7 times as many people attended Saturday night's concert as those who attended Friday night's concert.

Let p represent the number of people who attended Friday night's concert.

Write an expression, using p , that shows the number of people who attended Saturday night's concert.

$$3.7p$$

1

S6B Reggie found out that 3.7 times as many people attended Saturday night's concert as those who attended Friday night's concert.

Let p represent the number of people who attended Friday night's concert.

Write an expression, using p , that shows the number of people who attended Saturday night's concert.

$$p \times 3.7$$

1

S6C Reggie found out that 3.7 times as many people attended Saturday night's concert as those who attended Friday night's concert.

Let p represent the number of people who attended Friday night's concert.

Write an expression, using p , that shows the number of people who attended Saturday night's concert.

$$p \times 3.7 =$$

1

S6D Reggie found out that 3.7 times as many people attended Saturday night's concert as those who attended Friday night's concert.

Let p represent the number of people who attended Friday night's concert.

Write an expression, using p , that shows the number of people who attended Saturday night's concert.

0

At Saturday night's concert there were more people there than p .

S6E Reggie found out that 3.7 times as many people attended Saturday night's concert as those who attended Friday night's concert.

Let p represent the number of people who attended Friday night's concert.

Write an expression, using p , that shows the number of people who attended Saturday night's concert.

0

$$p \div 3.7 = SNC$$

S6F Reggie found out that 3.7 times as many people attended Saturday night's concert as those who attended Friday night's concert.

Let p represent the number of people who attended Friday night's concert.

Write an expression, using p , that shows the number of people who attended Saturday night's concert.

0

$$p \times 3.7 = R$$

24. Classification and Logical Reasoning - MC

Samantha, Joe, and Carl were the only three runners in a race. They each finished the race at different times. In how many different ways can first and second place ribbons be awarded to these three runners?

- 2
- 4
- 6
- 12

25. Mathematical Applications

E-1 Emma has volunteered to help raise money for the local library by running laps in a jog-a-thon. She plans to gather pledges from her friends and neighbors for the event, which will take place at the high school track. Here is what Emma knows:

- She gathered pledges from 10 people.
- Each of the 10 people pledged between \$0.50 to \$1.00 for each lap.
- For each lap she runs, she receives the amount of money pledged by all 10 people.
- She hopes to raise a total of about \$200.

If Emma wants to raise a total of **about \$200**, what is a **reasonable** estimate for the number of laps Emma will need to run? _____

Show your work or explain how you arrived at your estimated answer.
