Grade 6

Assessment of Reading, Writing and Mathematics, Junior Division

Student Booklet
Mathematics

SPRING 2008

RELEASED ASSESSMENT QUESTIONS

Education Quality and Accountability Office

EQAO

Please note: The format of these booklets is slightly different from that used for the assessment. The items themselves remain the same.

1 Which is the correct way to write the number 90 090 in words?

  a   nine hundred ninety

  b   nine thousand ninety

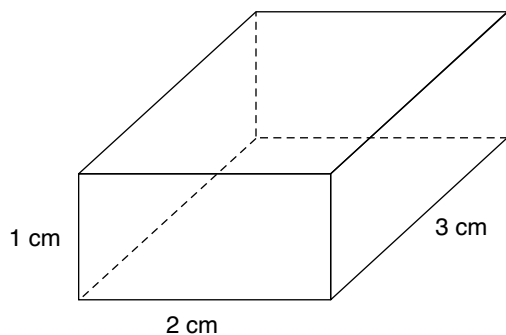 c   ninety thousand ninety

  d   nine hundred thousand ninety

2 Joseph finishes a swim race in 73.365 seconds. Joseph knows the following about his friend's time for the same race.

• The digit in the hundredths column is 3 more than Joseph's.

• The digit in the ones column is 2 less than Joseph's.

In what time does Joseph's friend swim the race?

  a   53.368

  b   53.395

  c   71.368

  d   71.395

3 What is the total surface area of the rectangular prism below?

  a   6 cm^2

  b   11 cm^2

  c   16 cm^2

  d   22 cm^2

4 What is the area of a parallelogram with a height of 2 m and a base of 3.5 m?

  a   1.75 m^2

  b   3.50 m^2

  c   7.0 m^2

  d   11.0 m^2

5 Consider the three equations below.

$$m + 9 = 12$$
$$m + n + 3 = 14$$
$$m + n + p = 15$$

What is the value of p?

  a   3

  b   4

  c   5

  d   8

6 What is the missing term in the decreasing pattern below?

532, 515, __, 481, 464
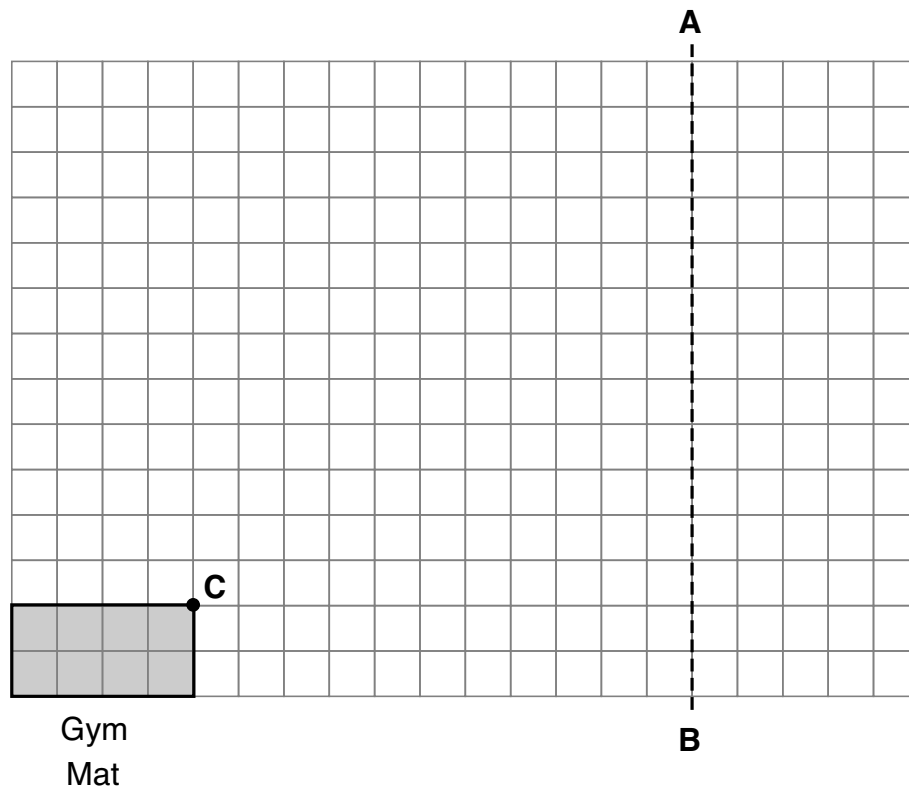
  a   497

  b   498

  c   499

  d   500

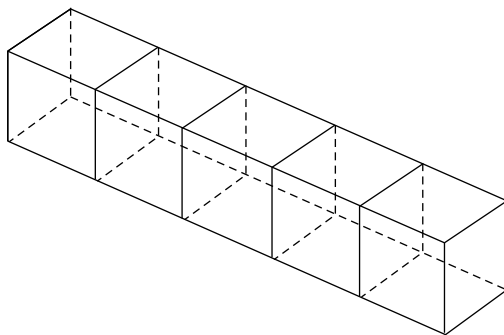**7** Mr. Lee moves a gym mat using the following four transformations.

1. Rotate the gym mat 90° clockwise about Point C.

2. Translate the gym mat 8 units to the right.

3. Translate the gym mat 6 units up.

4. Reflect the gym mat over line AB.

On the grid below, show the new location of the gym mat after Mr. Lee makes the four transformations.

Show all your work.

8 Daneen builds a model train with 5 cubes as shown below. The dimensions of each cube are 2 cm × 2 cm × 2 cm.
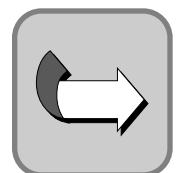

Daneen wants to paint the outside of the model train with red paint. The cost to paint 1 cm^2 of the train is $0.75. How much will it cost to paint the outside of the model train?

Show your work.

9 The faces of a number cube are labelled 1, 2, 2, 3, 4 and 5. The number cube is rolled 114 times.

• How many times would you expect the number 2 to appear?

Justify your answer.

10 Each of 130 students sign up for one of five activities. The table below shows some of the results.

Activity Sign-Up

Activity	Number of Students
Soccer	38
Chess	13
Band	33
Drama	
Photography	14

Susan estimates that 25% of the students signed up for drama. Jessica estimates that 50% of the students signed up for drama.

Using the benchmarks of 10%, 25%, 50%, 75% or 100%, justify which estimate is more appropriate.

11 Maddie's and Lisa's scores on 5 math quizzes are shown in the table below.

Math Scores out of 30

Maddie's scores	20	23	28	21	23
Lisa's scores	21	22	26	25	26

According to the data in the table, Maddie's mean score is

    a   lower than Lisa's mean score.

    b   the same as Lisa's mean score.

    c   higher than Lisa's median score.

    d   the same as Lisa's median score.

12 Which of the following represents the probability of an event that is very likely to occur?

    a   0

    b   0.15

    c   0.85

    d   1

13 Mrs. Smyte records the number of people in the school auditorium every hour during a school day. The data she collects show a maximum of 325 people in the auditorium. Which of the following is an appropriate scale for the vertical axis of the line graph for these data?

    a   7 increments with each increment representing 40 people

    b   10 increments with each increment representing 35 people

    c   15 increments with each increment representing 20 people

    d   20 increments with each increment representing 12 people

14 A pattern that increases when the same amount is added to each term is represented in the table below.

Pattern Table

Term Number	Term Value
1	11
2	17
3	23
4	29
5	35

Which of the following is the term number when the term value is 53?

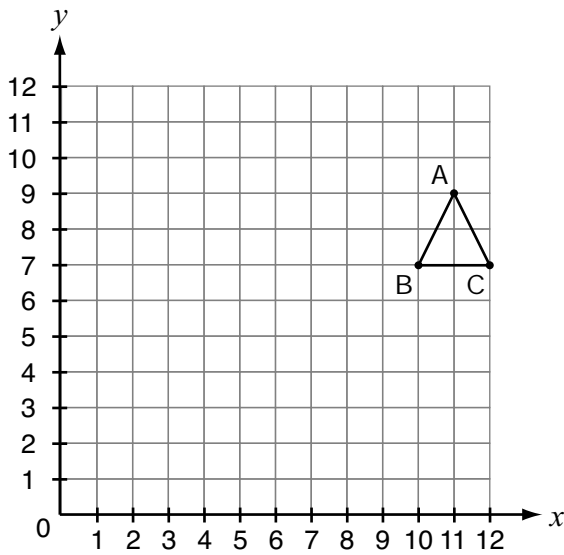   a   6

    b   8

    c   41

    d   47

15 Look at the repeating pattern below.

R R B B G G Y Y   R R B B G G Y Y

If the pattern continues, what will the 82nd letter be?
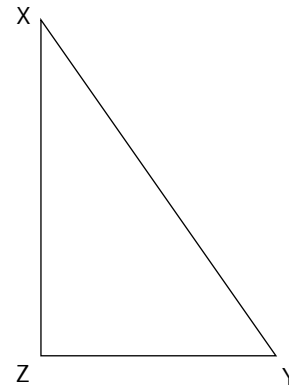
a   R

b   B

c   G

d   Y

16 Triangle ABC is graphed on the grid below.
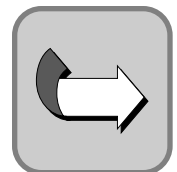

Triangle ABC is translated 3 units to the left and 4 units down. What are the new coordinates of Point C?
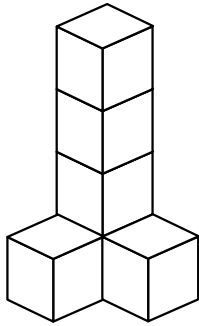
a   (3, 9)

b   (7, 3)

c   (8, 5)

d   (9, 3)

17 Which is closest to the measure of angle X in ΔXYZ? Use a protractor.
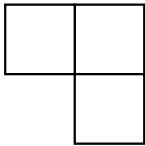

a   35°

b   55°

c   90°

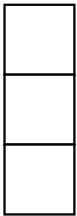d   145°

18 The three-dimensional figure below has been built using cubes.
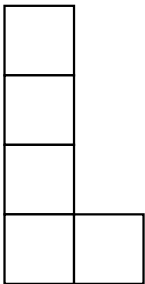

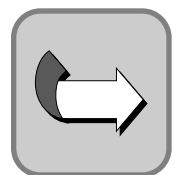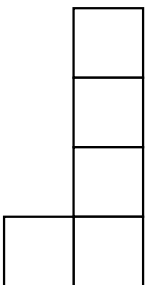What is a top view of this figure?

a

b

c
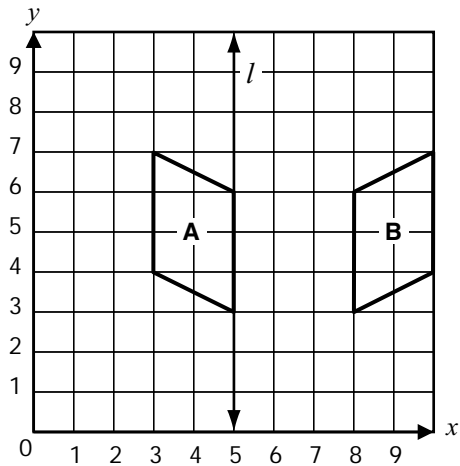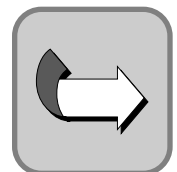
d

19 The time spent on which of the following activities would **best** be measured to the nearest hundredth of a second?

    a   playing at recess

    b   walking to school

    c   working on homework

    d   running a 50-metre race

20 Mr. Clarke wants to tile a floor that is 6 metres long and 4 metres wide. The dimensions of each square tile are 20 cm by 20 cm. What is the minimum number of tiles that Mr. Clarke will need to tile the entire floor?

    a   24

    b   400

    c   600

    d   1200

21 Which of the following would be the **most** appropriate metric unit to measure the length of Johann's arm?

    a   decimetre

    b   decametre

    c   millimetre

    d   kilometre

22 A package of 3 pairs of socks costs $3.90. What is the cost of one pair of socks?

    a $1.30

    b $1.90

    c $6.90

    d $11.70

23 A teacher plants 6 tulips and 9 roses in a planter. Which of the following represents the ratio of roses to tulips?

    a $\dfrac{3}{2}$

    b $\dfrac{2}{3}$

    c $\dfrac{15}{9}$

    d $\dfrac{9}{15}$

24 Which rule describes this numerical pattern?

$$17, 33, 65, 129, \ldots$$

To each term,

    a   add 16 to get to the next term.

    b   subtract 16 to get to the next term.

    c   multiply by 2, and add 1 to get to the next term.

    d   multiply by 2, and subtract 1 to get to the next term.

25 The total number of books Mitzi reads over the summer can be found using the expression $2 \times n + 3$, where n represents the number of weeks. After how many weeks will she have read 11 books?

    a   3

    b   4

    c   7

    d   8

26 Look at the figures below.

Which of the following describes how Parallelogram A was moved to create Parallelogram B?

    a   a reflection over line *l*

    b   a translation 3 units to the right

    c   a translation 3 units to the left, then a reflection over line *l*

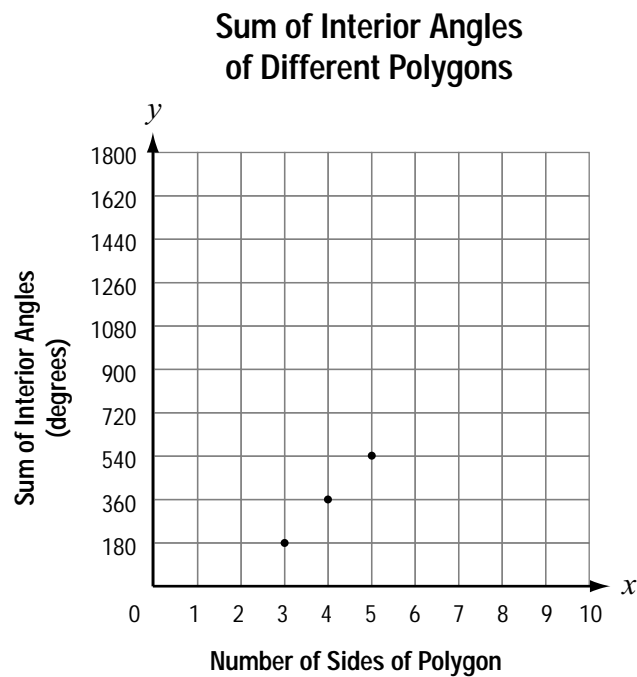   d   a translation 3 units to the right, then a reflection over line *l*

27 Josie, Christina, Audrey and Manny go shopping. Josie spends $\frac{4}{5}$ of her money, Christina spends 75% of her money, Audrey spends 0.68 of her money and Manny spends $\frac{17}{20}$ of his money.

Who has the largest percentage of their money left?

Justify your answer.

28 The graph below shows the relationship between the number of sides of a polygon and the sum of the interior angles of that polygon.

**Sum of Interior Angles
of Different Polygons**

- On the grid above, extend the pattern for polygons with 6 sides, 7 sides and 8 sides.

- Sam states that the rule to determine the sum of the interior angles of a polygon is "subtract 2 from the number of sides and multiply this difference by 180." Is Sam's rule correct?

Justify your answer.

29 Jason plays on his school's basketball team. The table below shows the number of points Jason scores in the first 9 games of the season.

Jason's Points

Game	Points
1	8
2	6
3	8
4	6
5	10
6	35
7	10
8	8
9	8

Explain why the mean does not truly represent Jason's usual performance.

Explain your thinking.

30 Using a protractor and a ruler, construct a parallelogram with an angle measure of 115° and sides with lengths of 7 cm and 6 cm. Mark on the parallelogram the length of each side and the measure of all angles.

Show your work.

31 Look at the expression below.

$$6 - 2 \times 6 \div 2$$

Which of the following shows the order of operations that can be used to simplify this expression correctly?

    a   subtraction, division, multiplication

    b   subtraction, multiplication, division

    c   division, subtraction, multiplication

    d   multiplication, division, subtraction

32 A swim team completes the 4-person relay in 210.625 seconds. The times for the first three swimmers are shown below.

Swimmers' Times

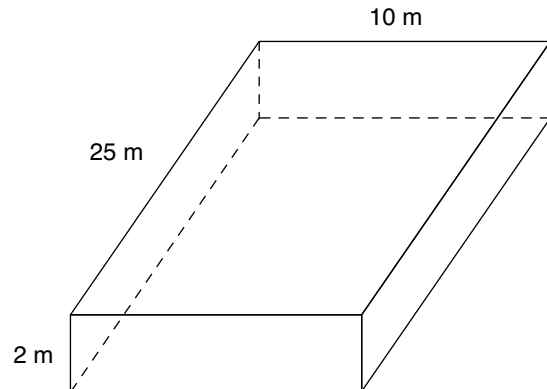| Swimmer	Time (in seconds)
1	53.452
2	59.371
3	47.582
4	?

What is the time for swimmer 4?

    a   50.220 seconds

    b   50.200 seconds

    c   50.022 seconds

    d   50.020 seconds

33 A group of 6 people equally shares 12 litres of juice. How many millilitres of juice does each person receive?

    a   2

    b   72

    c   2000

    d   12 000

34 A pool in the shape of a rectangular prism is shown below.

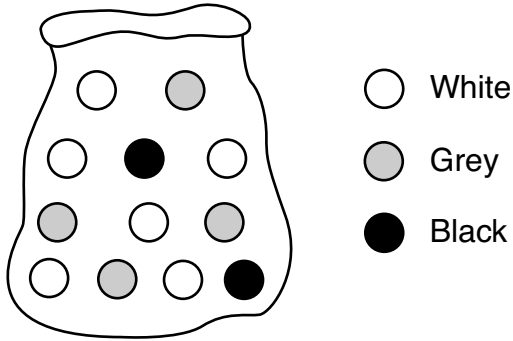**Hint :**
$1 \text{ m}^3 = 1000 \text{ L}$

How many litres of water are needed to completely fill the swimming pool?

    a   500 000

    b   50 000

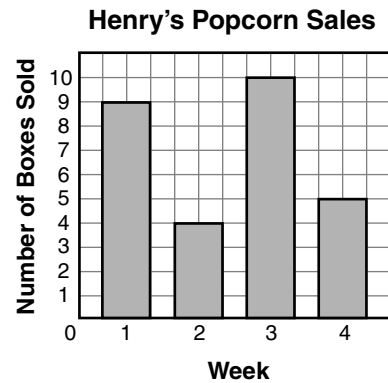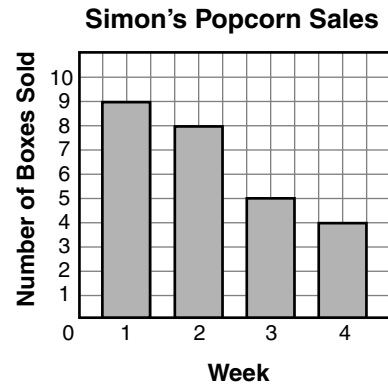   c   5000

    d   500

35 A bag contains 12 marbles.

White

Grey

Black

If Angelina picks one marble from the bag without looking, what is the probability that she will pick a black marble?

a $\frac{1}{12}$

b $\frac{1}{6}$

c $\frac{1}{3}$

d $\frac{1}{2}$

36 The graphs below show the popcorn sales for Simon and Henry.

Simon's Popcorn Sales

Henry's Popcorn Sales

According to the information in the graphs, Henry sold

a   fewer boxes than Simon in Week 1.

b   twice as many boxes as Simon in Week 2.

c   twice as many boxes as Simon in Week 3.

d   the same number of boxes as Simon in Week 4.