## DIRECTIONS

Read each of the questions below and then decide on the BEST answer. There are a lot of different kinds of questions, so read each question carefully before marking an answer on your answer sheet.

## 1

Graciella is one year less than twice as old as her youngest brother. Which expression could be used to show her age?
A. 1-2b
B. $2 \mathrm{~b}-1$
C. $2 b$
D. $2 b+1$

## 2

About 60\% of the used white paper is recycled at Lance's school. The school uses 1,260 pounds of paper per month. Which is the best estimate for the number of pounds of white paper recycled per month?
A. 500-560
B. 600-660
C. $720-780$
D. $850-910$

## 3

If the length and width of a rectangle are doubled, what is the effect on the area? It becomes:
A. two times as great.
B. three times as great.
C. four times as great.
D. eight times as great.

4


According to the graph, which of the following is true?
A. Over half the day is taken up by sleeping and eating.
B. School and homework make up approximately half of the waking hours.
C. The total time spent on chores and homework is greater than the amount of free time.
D. The largest part of the day is spent at school.

## 5

On January 4, the temperature at $2 \mathrm{p} . \mathrm{m}$. was $5^{\circ} \mathrm{C}$. At 11 p.m. it had dropped to $-3^{\circ} \mathrm{C}$. To find the number of degrees the temperature dropped, which equation could you use?
A. $5-3=x$
B. $5-(-x)=-3$
C. $5-x=-3$
D. $x-(-3)=5$

## Mathematics $\boldsymbol{V}$

## 6



In $\triangle \mathrm{ABC}$, a median is drawn from point A to a point $D$. $\overline{A D}$ is $\qquad$ -.
A. The bisector of $\overline{B C}$
B. The angle bisector of $A$
C. Perpendicular to $\overline{\mathrm{BC}}$
D. All of the above

## 7

During a week in January in Alaska the following high temperatures were recorded:

Anchorage $15^{\circ}, 6^{\circ},-2^{\circ}, 2^{\circ},-6^{\circ},-7^{\circ},-12^{\circ}$
Juneau $13^{\circ}, 10^{\circ},-4^{\circ},-2^{\circ},-2^{\circ}, 2^{\circ},-4^{\circ}$

Which of the following is the best symbol to use to compare the average high temperatures of Anchorage and Juneau?
A. Average in Anchorage = Average in Juneau
B. Average in Anchorage $\geq$ Average in Juneau
C. Average in Anchorage > Average in Juneau
D. Average in Anchorage < Average in Juneau

## 8



front

side

top

What is the volume of this figure?
A. $5 \mathrm{~cm}^{3}$
B. $6 \mathrm{~cm}^{3}$
C. $7 \mathrm{~cm}^{3}$
D. $8 \mathrm{~cm}^{3}$

## 9

What is the probability that a teacher chosen at random will be a male?

## SCHOOL TEACHERS

| Age in years | Male | Female |
| :---: | :---: | :---: |
| Under 25 | 5 | 7 |
| $25-34$ | 10 | 11 |
| $35-44$ | 15 | 17 |
| $45-54$ | 7 | 11 |
| 55 or over | 8 | 5 |

A. $\frac{1}{2}$
B. $\frac{9}{20}$
C. $\frac{13}{32}$
D. $\frac{15}{32}$

## 10

Twice a number ( $z$ ) added to 21 is equal to 9 times the number added to 7 . What is the number?
A. $z=-4$
B. $z=-2$
C. $z=2$
D. $z=4$

11


Figure KLMN is a square. What are the coordinates of point L?
A. $(-4,5)$
B. $(-2,5)$
C. $(-1,5)$
D. $(5,-4)$

## 12

A farmer has 6 times as many Holstein as Jersey cows. What proportion of the total number of cows are Holsteins?
A. $\frac{1}{6}$
B. $\frac{1}{7}$
C. $\frac{5}{6}$
D. $\frac{6}{7}$

13


The solution to a set of inequalities is graphed.
Which of the following could be the set of inequalities?
A. $2 x+y \leq 4$

$$
y \geq 0
$$

B. $2 x+y \geq 4$
$y \geq 0$
C. $2 x+y \leq 4$
$y \leq 0$
D. $2 x+y \geq 4$
$\mathrm{y} \leq 0$

## Mathematics $\mathbf{V}$

14


Bob is going to build a store. He draws a scale drawing of the store with a scale of 1 inch $=40$ feet. Find the actual width of the store.
A. 40 feet
B. 50 feet
C. 60 feet
D. 70 feet

## 15

Origin of Foreign Students in U.S. College
 12\%
Of the 500,000 foreign students who attended college in the U.S. in one year, how many were from Europe OR Asia?
A. 330,000
B. 270,000
C. 210,000
D. 60,000

## 16

Paula and James found 3 ordered pairs as part of a solution set for $y=4 x-2$. They decided to plot the points $\left\{(0,-2),\left(\frac{1}{2}, 0\right),(1,2)\right\}$ to find the relationship represented. Which graph did they draw?
A.

B.

C.

D.


## 17



Using the information in figure $A B C D$, find the area of $\triangle A B D$.
A. 24 sq. units
B. 30 sq. units
C. 32 sq. units
D. 36 sq. units

## 18

Tim was given $\$ 100$ for his twelfth birthday. He's curious to see how much it will grow to if he earns interest on it. His mother tells him that she has about $\$ 3000$ in the same kind of account and she earned $\$ 90$ last year. About how much interest could Tim expect to earn in a year?
A. $\$ 0.90$
B. $\$ 3.00$
C. $\$ 9.00$
D. $\$ 30.00$

## 19

This is a rectangular solid.


Megan needs to fill the box shown with cubes that are 2 inches on each side. How many cubes will she need?
A. 30
B. 60
C. 120
D. 240

## 20

A dart hits a random point inside the square.
What is the probability it will hit the target outside of the circle?

A. $\frac{\pi}{16}$
B. $\frac{64-16 \pi}{64}$
C. $\frac{16-8 \pi}{16}$
D. $\frac{\pi}{4}$

## Mathematics $\boldsymbol{\nabla}$

## 21

Mrs. Herrera is playing a game with her students. She says, "65 subtracted from my number is 32." Which equation could be used to find her number?
A. $N-65=32$
B. $32-N=65$
C. $65-N=32$
D. $65-32=N$

## 23

In this set of data:

$$
5,3,9,7,5,19,4
$$

5 represents the $\qquad$ .
A. mean
B. median
C. mode
D. median \& mode

## 24

Which table gives solutions for the equation

$$
y+1=-\frac{1}{2} x ?
$$

A.

| x | y |
| :---: | :---: |
| -3 | $-\frac{1}{2}$ |
| 0 | -1 |
| 5 | $-1 \frac{1}{2}$ |

C.

| x | y |
| :---: | :---: |
| -1 | 0 |
| 0 | -2 |
| 3 | -8 |

B.

| x | y |
| :---: | :---: |
| -2 | 2 |
| 1 | -4 |
| 4 | -10 |

D.

| x | y |
| :---: | :---: |
| -1 | $-\frac{1}{2}$ |
| 1 | $-1 \frac{1}{2}$ |
| 3 | $-2 \frac{1}{2}$ |

## 25

Jacob is 5.4 feet tall and casts a shadow that is 4 feet long. At the same place and time of day, a tree casts a shadow that is 22 feet long.
Approximately what is the height of the tree?
A. 16.3 feet
B. 26.0 feet
C. 27.4 feet
D. 29.7 feet

GRADE 8 MATHEMATICS SAMPLE TEST KEY 2004-2007

| Test Item | Correct Answer | Score Reporting Category | SRC Coding |
| ---: | :---: | :--- | :---: |
| 1 | B | Algebraic Relationships | 4.2 .85 |
| 2 | C | Calculations and Estimations | 1.1 .87 |
| 3 | C | Measurement | 2.2 .811 |
| 4 | B | Statistics and Probability | 3.3 .85 |
| 5 | C | Algebraic Relationships | 4.2 .87 |
| 6 | D | Geometry | 5.1 .81 |
| 7 | D | Calculations and Estimations | 1.2 .81 |
| 8 | B | Measurement | 2.2 .715 |
| 9 | D | Statistics and Probability | 3.2 .81 |
| 10 | C | Algebraic Relationships | 4.3 .81 |
| 11 | A | Geometry | 5.3 .81 |
| 12 | D | Calculations and Estimations | 1.1 .87 |
| 13 | B | Algebraic Relationships | 4.2 .82 |
| 14 | D | Measurement | 2.1 .81 |
| 15 | A | Statistics and Probability | 3.2 .81 |
| 16 | A | Algebraic Relationships | 4.2 .87 |
| 17 | B | Geometry | 5.1 .89 |
| 18 | B | Calculations and Estimations | 1.1 .87 |
| 19 | A | Measurement | 2.2 .811 |
| 20 | B | Statistics and Probability | 3.2 .81 |
| 21 | A | Algebraic Relationships | 4.2 .82 |
| 22 | C | Geometry | 5.1 .89 |
| 23 | D | Statistics and Probability | 3.1 .81 |
| 24 | D | Algebraic Relationships | 4.2 .87 |
| 25 | D | Geometry | 5.1 .88 |


| CONVERTING TO A RIT SCORE |  |  |  |
| :---: | :---: | :---: | :---: |
| Number Correct | RIT score | Number Correct | RIT score |
| 1 | 200.3 | 14 | 236.8 |
| 2 | 207.8 | 15 | 238.5 |
| 3 | 212.5 | 16 | 240.4 |
| 4 | 216.0 | 17 | 242.4 |
| 5 | 218.9 | 18 | 244.4 |
| 6 | 221.4 | 19 | 246.7 |
| 7 | 223.7 | 20 | 249.2 |
| 8 | 225.8 | 21 | 252.1 |
| 9 | 227.8 | 22 | 255.6 |
| 10 | 229.6 | 23 | 260.2 |
| 11 | 231.4 | 24 | 267.8 |
| 12 | 233.2 | 25 | 274.9 |
| 13 | 234.9 |  |  |

Note: The sample test is for practice only; scores may not be substituted for the Oregon Statewide Assessment.

