8P'

## Comprehensive System of Student Assessment

## Standards Based Assessments

Grade 8<br>Reading * Writing $\star$ Mathematics Practice Test Book



Spring 2007
Alaska Department of Education \& Early Development

Name:

## MATHEMATICS PRACTICE TEST

## You may use the Mathematics Reference Sheet any time during the test.

1. Toni needs to solve the equation shown below.

$$
\frac{3}{4} t=\frac{6}{20}
$$

What operation should Toni perform to solve the equation for $t$ ?
A multiply both sides by $\frac{3}{4}$
B divide both sides by $\frac{3}{4}$
C add $\frac{3}{4}$ to both sides
D subtract $\frac{3}{4}$ from both sides
2. Harley is making a scale drawing of an airplane for class. The airplane has a 100 -foot wingspan and is 50 feet long. Harley's drawing has a 10 -inch wingspan. What is the length of Harley's drawing?

A 5 inches
B $\quad 9 \frac{1}{2}$ inches
C $10 \frac{1}{2}$ inches
D 20 inches

## MATHEMATICS PRACTICE TEST

3. In a survey of eighth graders, $\frac{4}{5}$ of the students preferred using pens over pencils. What percent of the students preferred using pens?

A $20 \%$
B $40 \%$
C 80\%
D $90 \%$
4. Amanda ran for exercise. The table below shows the total number of miles she ran through the end of each week.

| Miles Run <br> Each Week |  |
| :---: | :---: |
| Week Miles <br> 1 2 <br> 2 5 <br> 3 8 <br> 4 11 |  |

The pattern continued. How many miles did she run by the end of the twentieth week?

A 40
B 43
C 56
D 59

## MATHEMATICS PRACTICE TEST

5. Devin is playing a game which uses a spinner and a coin.


Each move is determined by the result of spinning the spinner and flipping the coin. What is the probability that Devin spins a "Green" and flips a "Tails"?

A $\frac{1}{6}$
B $\frac{1}{5}$
C $\frac{1}{3}$
D $\frac{1}{2}$

Turn to page 23 in your practice test answer booklet to complete question 6.


## MATHEMATICS PRACTICE TEST

7. What is the prime factorization of 200 ?

A $\quad 2^{3} \times 5^{2}$
B $\quad 2^{2} \times 5^{3}$
C $\quad 2^{5} \times 5^{2}$
D $2^{5} \times 5^{3}$
8. On a map the distance between Juneau and Fairbanks is 5 inches. The approximate distance is 625 miles. The distance between Denver and Fairbanks is 19.5 inches on the same map. What is the approximate distance from Denver to Fairbanks to the nearest mile?

A 1,250
B 1,813
C 2,438
D 3,063

## MATHEMATICS PRACTICE TEST

9. The ratio of fishing boats to sailboats in a bay is $8: 3$. There are a total of 24 sailboats in the bay. How many fishing boats are in the bay?

A 9
B 64
C $\quad 72$
D 192
10. Bonita spent $\$ 8.94$ on groceries. She bought a gallon of milk for $\$ 4.29$ and 3 pounds of sliced turkey. How much does 1 pound of sliced turkey cost?

A $\quad \$ 1.43$
B $\quad \$ 1.55$
C $\quad \$ 2.08$
D $\quad \$ 2.98$

## MATHEMATICS PRACTICE TEST

11. Kelly is saving for a new pair of shoes. She plans to save $\$ 3.00$ per week until she has enough to buy the shoes. Which graph below best represents the relationship between the amount of money Kelly has saved and the number of weeks she has been saving?


Turn to page 25 in your practice test answer booklet to complete question 12.

## MATHEMATICS PRACTICE TEST

13. Beth chooses from the following to decorate a room.

- 4 choices of paint colors (blue, green, pink, white)
- 2 choices of borders (flowers, cats)
- 3 sets of curtains (white, pink, blue)

Beth will randomly choose 1 paint color, 1 border, and 1 set of curtains. What is the probability that Beth will pick blue paint, a flower border, and white curtains?

A $\frac{1}{24}$
B $\quad \frac{1}{9}$
C $\quad \frac{1}{4}$
D $\frac{1}{2}$
14. How is $\left(6 \times 10^{5}\right)+\left(3 \times 10^{4}\right)+\left(4 \times 10^{2}\right)+\left(5 \times 10^{1}\right)+\left(8 \times 10^{0}\right)$ written in standard form?

A 63,450
B 63,458
C 630,458
D 630,485

## MATHEMATICS PRACTICE TEST

15. Bryan is designing a gift container shown below.


His design will be folded to make the container. What is the shape of Bryan's container?

A circle
B cone
C cylinder
D sphere
16. Easha has 3 less than 5 times the number of quarters $(I)$ that Isabelle has. Which expression shows the number of quarters Easha has?

A $3 I-5$
B $5 I-3$
C 5-3I
D $3-5 I$

## MATHEMATICS PRACTICE TEST

17. The triangular prism below represents the shape of Sylvia's tent.


What is the volume of the tent in cubic feet?
A 180
B 241
C 255
D 360

Turn to page 27 in your practice test answer booklet to complete question 18.

## MATHEMATICS PRACTICE TEST

19. Owen bought a coat at $5 \%$ off the regular price of $\$ 60.00$. Which process can Owen use to find the amount of his discount?

A divide 60 by 0.05
B divide 60 by 5
C multiply 60 by 5
D multiply 60 by 0.05
20. Mary Beth had a bag with 25 colored beads. There were 5 different colors and 5 beads of each color. Mary Beth drew a bead from the bag and replaced it 30 times and recorded the results.

Beads Drawn from a Bag

| Bead Color | Number of <br> Times Drawn |
| :--- | :---: |
| red | 6 |
| blue | 5 |
| yellow | 5 |
| green | 7 |
| purple | 7 |

What are the experimental and theoretical probabilities that Mary Beth will draw a blue bead when she tries again?

A theoretical probability $=\frac{1}{5} ;$ experimental probability $=\frac{1}{6}$
B theoretical probability $=\frac{1}{5} ;$ experimental probability $=\frac{1}{30}$
C $\quad$ theoretical probability $=\frac{1}{6} ;$ experimental probability $=\frac{1}{5}$
D theoretical probability $=\frac{1}{6} ;$ experimental probability $=\frac{1}{30}$

## MATHEMATICS PRACTICE TEST

21. Light travels at a rate of about 186,000 miles per second. What is 186,000 written in scientific notation?

A $\quad 1.86 \times 10^{-5}$

B $\quad 1.86 \times 10^{-3}$
C $\quad 1.86 \times 10^{3}$

D $\quad 1.86 \times 10^{5}$
22. The equation below is used to find $(x, y)$ coordinates.

$$
y=3 x+2
$$

Which coordinates could be found using the equation above?
A

| $x$ | $y$ |
| :---: | :---: |
| 1 | 3 |
| 2 | 6 |
| 3 | 9 |

B

| $x$ | $y$ |
| :---: | :---: |
| 3 | 1 |
| 6 | 2 |
| 9 | 3 |

C

| $x$ | $y$ |
| :---: | :---: |
| 1 | 5 |
| 2 | 8 |
| 3 | 11 |

D

| $\boldsymbol{x}$ | $\boldsymbol{y}$ |
| ---: | :---: |
| 5 | 1 |
| 8 | 2 |
| 11 | 3 |

## MATHEMATICS PRACTICE TEST

23. Donna's beach bag is similar to her sister Sally's. The figures below show some of the measurements.


Which proportion could be used to find the width of Sally's beach bag?
A $\frac{18}{36}=\frac{w}{25}$
B $\frac{18}{25}=\frac{w}{36}$
C $\frac{25}{36}=\frac{18}{w}$
D $\frac{36}{w}=\frac{18}{25}$
24. Tim is building 2 rabbit cages in the shape of rectangular prisms. The first cage is 3 feet long, 2 feet wide, and 2 feet high. The second cage has the same width and height, but is twice as long. How many times larger is the volume of the second cage compared to the volume of the first cage?

A 2
B 4
C 6
D 8


## MATHEMATICS PRACTICE TEST

25. A group of friends studied together for a science quiz. The table below shows their quiz scores.

Quiz Scores of Friends

| Friend | Nancy | Franz | Cindy | Brandon | Sarah |
| :--- | :---: | :---: | :---: | :---: | :---: |
| Score | 10 | 9 | 7 | 8 | 1 |

Which measure best describes the data?
A mean
B median
C mode
D maximum

## MATHEMATICS PRACTICE TEST

26. Joanne and Christopher are designing a quilt. They start by creating a triangle shape in the lower left quadrant as shown below.


They transform it by rotating the triangle shown above $90^{\circ}$ clockwise about the origin. What does the new design look like?
A

B

C

D


## MATHEMATICS PRACTICE TEST

27. Pablo used 1 cubic foot of clay to build his model volcano. How many cubic inches is this?

A 12
B 36
C 144
D 1728
28. The temperature on Monday was $-23^{\circ} \mathrm{F}$. The temperature on Tuesday was $18^{\circ}$ higher. What was the temperature on Tuesday?

A $-41^{\circ} \mathrm{F}$
B $\quad-5^{\circ} \mathrm{F}$
C $\quad 5^{\circ} \mathrm{F}$
D $41^{\circ} \mathrm{F}$

## MATHEMATICS PRACTICE TEST

29. The chart below shows the number of fish Danny caught at different depths in a lake.

Fish Caught

| Water Depth <br> (in meters) | Number of Fish |
| :---: | :---: |
| $0-2$ | 2 |
| $2-4$ | 5 |
| $4-6$ | 6 |
| $6-8$ | 10 |
| $8-10$ | 1 |

Which histogram best represents Danny's data?
A
Fish Caught

B
Fish Caught

C
Fish Caught

D
Fish Caught


## MATHEMATICS PRACTICE TEST

30. Which operation should be performed first in the expression
$18-2+5 \times(16+66 \div 2)$ ?
A $2+5$
B $5 \times 16$
C $16+66$
D $66 \div 2$
31. A package contains 2.5 yards of ribbon. How many inches of ribbon are in the package?

A $\quad 7.5$
B 30
C 90
D 250

