





Alaska

Comprehensive System of Student Assessment

**Grade 10 Standards Based Assessments—
High School Graduation Qualifying Examination**

Writing

FORM PTWM
Fall 2010



For an item that is **not** multiple-choice, you must respond to what is requested, write in English, and make sure that your responses are readable. No credit will be given to any response that

- is too short to score
- consists of “I don’t know”
- indicates refusal to respond to the item
- consists of copying the item
- does not address the item or topic
- is not legible
- is written in a language other than English. (If part of the response is in English, that part will be scored.)

WRITING

SAMPLE QUESTIONS

Directions

Read the paragraphs. They have mistakes that need to be corrected. Use the paragraphs to answer Samples A and B.

¹ Every summer my community has a celebration. ² Takes part in the event. ³ Some community organizations hold contests that are fun for all ages.

⁴ My little sister has a pet dog. ⁵ We also feast on the favorite foods of our area.

Sample A

Choose the correct way to write Sentence 2.

- (A) Everyone takes part in the event.
- (B) Taking part in the event.
- (C) Everyone taking part in the event.
- (D) It is correct as is.

Sample B

Which sentence does not belong in the paragraph?

- (A) Sentence 2
- (B) Sentence 3
- (C) Sentence 4
- (D) Sentence 5



Directions

Choose the sentence that is written correctly.

Sample C

- Ⓐ Black bears gain as much weight, as they can in the summer.
- Ⓑ Black bears gain as much weight as they can in the summer?
- Ⓒ Black bears gain as much weight as they can in the summer.
- Ⓓ Black bears, gain as much weight as they can in the summer.

Directions

Read the sentences. On the lines below, write the sentences and correct the four capitalization errors.

Sample D

mary dreamed of a trip to Washington. She wanted to visit a Museum and see the Real copy of the declaration of Independence.



Sample E

Read the information.

My twin brother's name is Patrick.

Patrick has been taking music lessons since he was five years old.

Patrick's favorite style of music is jazz.

Combine the information into one complete sentence.

Sample F

Write the sentences below in a paragraph, putting them in the order that makes the most sense. Add transitional words or phrases as needed to make the paragraph flow.

- *We had won the championship!*
- *The championship game began badly for our basketball team.*
- *As the buzzer sounded to end the game, we scored a basket.*
- *We played hard and tied the score in the final seconds.*



Directions

Read the passage. It has mistakes that need to be corrected. Use the passage to answer questions 1 through 4.

¹ My hands were clammy, my head hurt, and I wanted to go home, but I couldn't. ² There I was standing in front of a crowded auditorium. ³ I asked myself, "How did I get into this situation?"

⁴ The answer was easy—I had earned first place in a citywide speech tournament. ⁵ I used to get so nervous giving speeches at school tournaments. ⁶ Part of winning the tournament was delivering my speech at the Haines County Awards Ceremony.

⁷ As I waited my turn, the speaker ahead of me droned on. ⁸ I couldn't focus on her words because I was so nervous. ⁹ Finally, it was my turn. ¹⁰ I rose and saw a sea of faces staring at me. ¹¹ I took a deep breath.

¹² The hours of rehearsing paid off. ¹³ The words that had eluded me while I was waiting flowed from my lips. ¹⁴ The audience listened intently and laughed at my jokes. ¹⁵ I lost all sense of time. ¹⁶ I was rewarded with applause, sweet applause. ¹⁷ As I concluded and returned to the seating area.

¹⁸ My coach gave me a monstrous grin. ¹⁹ "Great job—how did it feel?"

²⁰ "Oh," I shrugged, "nothing to it."

1 Which sentence does not belong in the passage?

- (A) Sentence 2
- (B) Sentence 5
- (C) Sentence 10
- (D) Sentence 16



WRITING

2 Which is the best detail to add after Sentence 8?

- Ⓐ My speech was about a trip that I had taken with my family.
- Ⓑ After the speech was over, I would rejoin my team in the audience.
- Ⓒ I struggled to remember the opening words of my speech.
- Ⓓ To attain this honor, I had defeated several dozen competitors.

3 Which is not a complete sentence?

- Ⓐ Sentence 4
- Ⓑ Sentence 7
- Ⓒ Sentence 9
- Ⓓ Sentence 17

4 Choose the correct way to write Sentence 20.

- Ⓐ “Oh, I shrugged, nothing to it.”
- Ⓑ “Oh” I shrugged, “nothing to it.”
- Ⓒ “Oh,” I shrugged “nothing to it.”
- Ⓓ It is correct as is.

GO ON 

Directions

Read the passage. It has mistakes that need to be corrected. Use the passage to answer questions 6 through 8.

¹ Do you like to read? ² Would you enjoy reading more from your favorite authors?
³ Would you like to discuss books with your classmates without worrying about right or wrong answers? ⁴ Then think about joining Readers' Corner.

⁵ Readers' Corner takes place in the far left corner of the cafeteria. ⁶ Participants meet the first and third Thursday of the month to have lively discussions about various topics related to the books they are reading. ⁷ Sometimes we all read the same book, or sometimes we each read different books by the same author. ⁸ Volunteers take charge of things, but everyone is welcome to say what they want. ⁹ Meeting during lunch period gives us the opportunity to occasionally bring food that relates to what we are reading. ¹⁰ Last fall, after reading a book set in Mexico, everyone shared an authentic Mexican meal.

¹¹ At the beginning of each semester, we meet to create our reading list for the next few months. ¹² Many of us find this meeting motivating as well as fun because we have so many ideas and interests. ¹³ At the end of the meeting, we vote on selections and sign up to lead the group discussions.

¹⁴ If you are curious about Readers' Corner come to our meeting next Thursday.
¹⁵ New members are welcome any time.

WRITING

6 Which revision of Sentence 8 is consistent with the voice of the passage?

- Ⓐ Volunteers dominate the process, but everyone will have a bit of talk time.
- Ⓑ Volunteers rule the discussion, but everyone is there to share an opinion or two.
- Ⓒ Volunteers lead the discussion, but everyone is welcome to contribute opinions.
- Ⓓ Volunteers take over the discussion, but everyone can say whatever comes to mind.

7 Which sentence contains a word that is misspelled?

- Ⓐ Sentence 6
- Ⓑ Sentence 8
- Ⓒ Sentence 9
- Ⓓ Sentence 12

8 Choose the correct way to punctuate Sentence 14.

- Ⓐ If you are curious about Readers' Corner come to our meeting, next Thursday.
- Ⓑ If you are curious about Readers' Corner, come to our meeting next Thursday.
- Ⓒ If you are curious, about Readers' Corner, come to our meeting next Thursday.
- Ⓓ If you are curious about Readers' Corner, come to our meeting, next Thursday.



Directions

For questions 9 and 10, fill in the circle for the answer you choose.

9 Read the paragraph.

For the past three summers, I have worked as a junior camp counselor at a day camp program. I've obtained my lifeguard certification and have taken other water safety courses. Most of all, I truly enjoy working with children and feel that I relate well with them.

Which is the best topic sentence for the paragraph?

- Ⓐ I am well prepared to act as a counselor at your camp this summer.
- Ⓑ My friends think I do an outstanding job working with children.
- Ⓒ Lifeguard training, I found, took many hours of training.
- Ⓓ I would like to know more about your camp and its facilities.

10 Choose the best way to combine the following sentences.

The Great Depression started on October 29, 1929.

This is the day the stock market fell.

It is also known as Black Tuesday.

- Ⓐ The stock market started the Great Depression on a black day in October of 1929.
- Ⓑ The Great Depression started when the stock market fell on Black Tuesday, October 29, 1929.
- Ⓒ The stock market fell on a day that was Black Tuesday in October and it was the beginning of the Great Depression.
- Ⓓ The Great Depression started on October 29, 1929, this is the day the stock market fell it is also known as Black Tuesday.

WRITING

11 Read the paragraph.

Hobbies do more than take up people's time; they can also provide big benefits. For example, stamp collectors end up learning a great deal about history and geography. The reward for woodworkers is owning handmade furniture. Those with sports as a hobby gain fitness.

On the lines below, write two new sentences that would add appropriate details to the paragraph. Be sure to use correct capitalization and punctuation. This item is worth 2 points.



Directions

Read the letter to the editor. It has mistakes that need to be corrected. Use the letter to answer questions 13 through 17.

Dear Editor:

¹ As a student at South High School, I have written many reports on a variety of subjects. ² The school library has been helpful, but it often lacks the resources I have needed. ³ I have gone to the community library, and it has been invaluable to me in my research. ⁴ For this reason I urge voters to support the library tax proposal on the November ballot.

⁵ The community library is beneficial to all residents. ⁶ Students use it for research on reports. ⁷ Adults can use it to find recreational reading or to keep current in their jobs.

⁸ Books are not the only resources available at the library. ⁹ Internet terminals can be used there. ¹⁰ Periodicals and videos are also available through this excellent community resource. ¹¹ In addition, the reference librarians take time to help patrons with especially difficult questions.

¹² However, the library can continue to serve the community only if we continue to support it. ¹³ Please vote for the tax proposal in November. ¹⁴ Your “yes” vote will help us keep one of our community’s greatest assets.

13 The letter was most likely written to

- (A) describe the election process.
- (B) persuade voters to support a proposal.
- (C) outline a plan for a new library.
- (D) inform voters of their voting rights.



14 Which is the correct way to write Sentence 2?

- Ⓐ The school library has been helpful but it often lacks the resources I have needed.
- Ⓑ The school library has been helpful; but, it often lacks the resources I have needed.
- Ⓒ The school library has been helpful; but it often lacks the resources, I have needed.
- Ⓓ It is correct as is.

15 The word it in Sentence 7 refers to

- Ⓐ research.
- Ⓑ resource.
- Ⓒ proposal.
- Ⓓ library.

16 Choose the best way to combine Sentences 9 and 10.

- Ⓐ Internet terminals can be used there, or periodicals and videos are also available through this excellent community resource.
- Ⓑ Internet terminals can be used there, periodicals and videos are also available through this excellent community resource.
- Ⓒ Internet terminals, as well as periodicals and videos, are also available through this excellent community resource.
- Ⓓ Internet terminals can be used there, although periodicals and videos are also available through this excellent community resource.

17 Which sentence has a spelling error?

- Ⓐ Sentence 1
- Ⓑ Sentence 3
- Ⓒ Sentence 8
- Ⓓ Sentence 11

Directions

For questions 18 through 23, fill in the circle for the answer you choose.

18 Read the opening sentences for an essay on global warming.

As world temperatures rise, polar ice caps melt and raise the level of the oceans. If you live near a coast, your choices are simple: move inland or grow gills.

The opening sentences are effective because they use

- (A) statistics.
- (B) humor.
- (C) an anecdote.
- (D) a quotation.

19 Which thesis statement would not be included in a persuasive essay?

- (A) Energy conservation, begun in the 1970s, spread slowly across the United States.
- (B) Energy conservation is needed to maintain the current standard of living.
- (C) The benefits of energy conservation are greatly exaggerated in the press.
- (D) The future of energy conservation lies in the quality of school science programs.

20 Tracy is writing directions for replacing the glass in a window. Which structure should he use?

- (A) comparison and contrast
- (B) cause and effect
- (C) definition of terms
- (D) chronological order



21 Read the thesis statement from Greg’s research paper.

Aspirin is one of the most versatile medicines on the market today.

To develop his thesis statement Greg should

- Ⓐ describe how medicines on the market today are approved.
- Ⓑ explain how aspirin effectively treats a number of symptoms.
- Ⓒ tell the history of how aspirin was discovered and developed.
- Ⓓ show how certain widely used medicines rise and fall in popularity.

22 Which sentence is punctuated correctly?

- Ⓐ I hope that I can get a summer job, if not; I will take classes and help out more at home.
- Ⓑ I hope that I can get a summer job; if not; I will take classes, and help out more at home.
- Ⓒ I hope that I can get a summer job, if not, I will take classes, and help out more at home.
- Ⓓ I hope that I can get a summer job; if not, I will take classes and help out more at home.

23 Which is not a complete sentence?

- Ⓐ The Brooklyn Bridge was an architectural marvel celebrated throughout the world.
- Ⓑ Covered with barnacles and seaweed, the ship’s hull was slowly falling apart.
- Ⓒ It was the satisfaction of creating something new that Brenda most enjoyed about cooking.
- Ⓓ Whenever Jonathan returned with what seemed like a truckload of salmon from a fishing trip.



**DO NOT
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**Use the Writing Skills Checklist below
to improve your composition.**

Make sure you do the following:

- 1** Write a composition with a thesis statement that is supported with details, well-developed paragraphs, transitions, and a conclusion.
- 2** Use appropriate voice.
- 3** Write so that your composition will make sense to the person who reads it.
- 4** Vary the sentence structure.
- 5** Choose your words carefully.
- 6** Use complete sentences.
- 7** Use correct grammar.
- 8** Use correct capitalization and punctuation.
- 9** Spell words correctly.
- 10** Write neatly.

Your composition will be scored using the Alaska Comprehensive System of Student Assessment 4- or 6-Point Holistic Rubric.

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Comprehensive System of Student Assessment

**Grade 10 Standards Based Assessments—
High School Graduation Qualifying Examination**

Mathematics

FORM PTWM

Fall 2010



For an item that is **not** multiple-choice, you must respond to what is requested, write in English (and/or mathematics symbols when appropriate), and make sure that your responses are readable. No credit will be given to any response that

- is too short to score
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MATHEMATICS

SAMPLE QUESTIONS

Sample A

The coordinates on a grid of the location of 2 trees in a park are (3, 9) and (5, 3). What are the coordinates of the midpoint of the line segment joining the 2 trees?

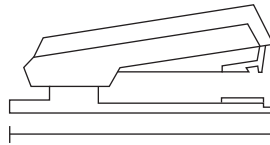
- (A) (2, 6)
- (B) (4, 6)
- (C) (4, 12)
- (D) (8, 12)

Sample B



Use your ruler to help you solve this problem.

A picture of a stapler is shown below.

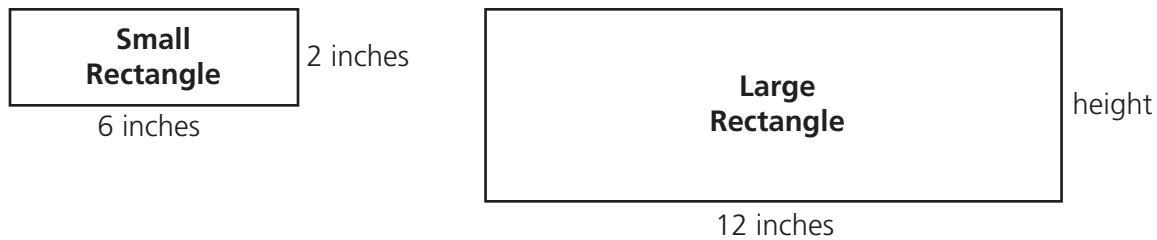


What is the length of the picture of the stapler?

- (A) $1 \frac{3}{16}$ inches
- (B) $1 \frac{3}{8}$ inches
- (C) $2 \frac{3}{16}$ inches
- (D) $2 \frac{3}{8}$ inches

Sample C

Jim is making a similar, large rectangle from a small rectangle as shown below.



What is the height of the large rectangle? This item is worth 2 points.

Show the work.

Answer: _____ inches



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

- 1** Denali National Park covers approximately 6,075,030 acres. What is the place value of the 6 in the number 6,075,030?
- Ⓐ hundred thousands
 - Ⓑ hundred-thousandths
 - Ⓒ millions
 - Ⓓ millionths

- 2** In June, the average temperature in Vancouver is 15 degrees Celsius (C). What is this temperature in degrees Fahrenheit (F), to the nearest degree? ($F = \frac{9}{5}C + 32$)
- Ⓐ -31
 - Ⓑ -9
 - Ⓒ 27
 - Ⓓ 59

3 Len has 3 yellow baseball hats and 2 blue baseball hats. He picks 1 of the hats without looking. What is the probability that Len picks a blue baseball hat?

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

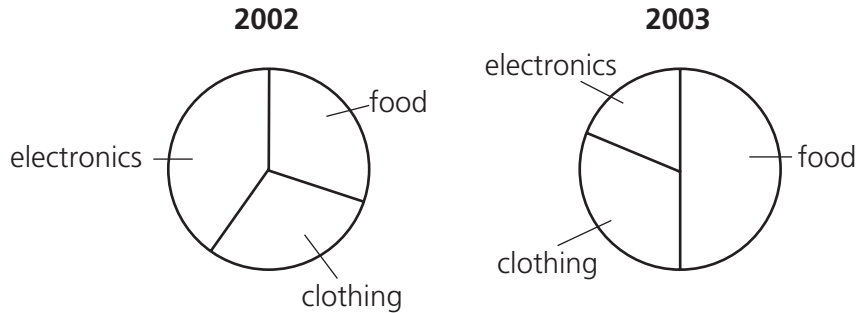
4 The revenue earned by Susan's business is determined by the equation $R = 0.025x^2 + 4x$ where x is the number of items sold. What would be the revenue for selling 2,000 items?

- Ⓐ \$ 100
- Ⓑ \$ 8,100
- Ⓒ \$100,004
- Ⓓ \$108,000

MATHEMATICS

- 5 The percent of different types of items sold at Bob's store for the years 2002 and 2003 are shown in the circle graphs below.

BOB'S STORE SALES



Which table shows the data in the circle graphs?

Ⓐ

BOB'S STORE SALES

Item	Percent in 2002	Percent in 2003
food	25	50
clothing	25	30
electronics	50	20

Ⓑ

BOB'S STORE SALES

Item	Percent in 2002	Percent in 2003
food	30	10
clothing	30	20
electronics	40	30

Ⓒ

BOB'S STORE SALES

Item	Percent in 2002	Percent in 2003
food	33	50
clothing	33	20
electronics	33	30

Ⓓ

BOB'S STORE SALES

Item	Percent in 2002	Percent in 2003
food	30	50
clothing	30	30
electronics	40	20

➔
GO ON

- 6 A pizza has been divided into 8 equal pieces. Frances eats 2 pieces and Kay eats 3 pieces. Which equation models the fraction of the total pizza they have eaten?

(A) $\frac{2}{8} + \frac{3}{8} = \frac{5}{8}$

(B) $\frac{2}{8} + \frac{3}{8} = \frac{5}{16}$

(C) $\frac{1}{2} + \frac{1}{3} = \frac{5}{6}$

(D) $\frac{1}{2} + \frac{1}{3} = \frac{2}{5}$

- 7 Which is equivalent to $(-3m^9)(4m^{-5})$?

(A) $-12m^{-4}$

(B) $-12m^4$

(C) $\frac{4}{3m^4}$

(D) $\frac{-3m^4}{4}$

- 8 The cashier gave Ben 3 five-dollar bills, 1 quarter, 2 dimes, and 1 penny in change. How much change did Ben receive?

(A) \$ 3.36

(B) \$ 3.46

(C) \$15.36

(D) \$15.46



- 9** The table below shows the results of a survey of 200 people attending a hockey game.

CHOICES FOR SOUVENIRS

Item	Number of People
cap	68
jersey	19
pennant	22
program	91

The attendance for the hockey game is about 25,000 visitors each game. Based on the table, how many people out of 25,000 could be expected to buy a pennant?

- (A) 1,375
- (B) 1,650
- (C) 2,750
- (D) 3,850

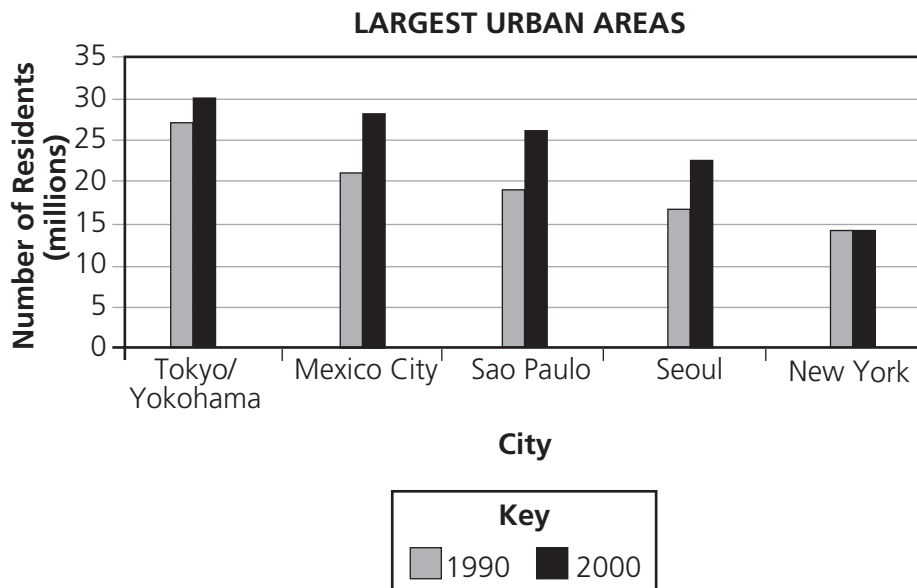
- 10** The expression below can be used to find the number of square feet of carpet that Dion bought for his house.

$$18 \times 15 + 15^2 + 10^2$$

How many square feet of carpet did Dion buy for his house?

- (A) 320
- (B) 358
- (C) 595
- (D) 895

- 11 The populations for 1990 and 2000 of the 5 largest urban areas in the world are shown in the graph below.



Which statement about change in the number of residents of each urban area from 1990 to 2000 is correct based on the data in the graph?

- (A) In each of the 5 urban areas, the population increased by more than 1 million.
 - (B) Tokyo/Yokohama had the largest increase in the number of residents.
 - (C) New York had a larger increase in the number of residents than Seoul.
 - (D) The number of residents of Mexico City and Sao Paulo increased by about the same amount.
-
- 12 How many vertices does a cube have?

- (A) 4
- (B) 6
- (C) 8
- (D) 12



- 13** The amount of precipitation in Juneau for the month of March was 4 inches. In April, the amount of precipitation in Juneau decreased by 20% from the amount that fell in March. How many inches of precipitation did Juneau get in April? Show the work necessary to solve the problem, and write the answer on the line below. This item is worth 2 points.

Show the work.

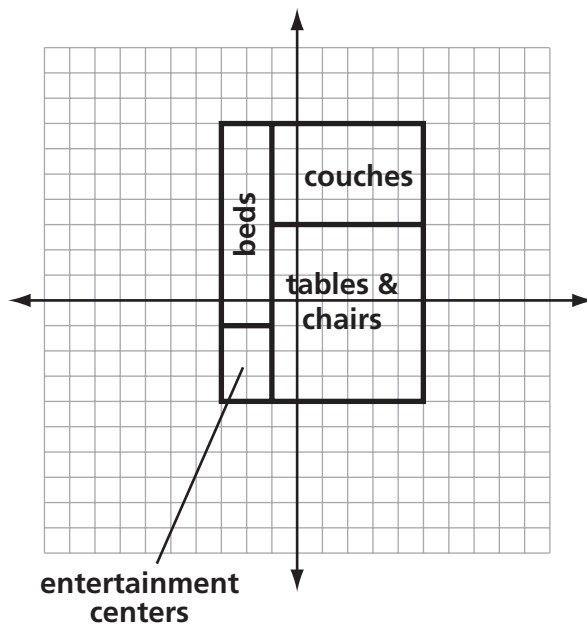
Answer: _____ inches

- 14** Charlotte scores an average of 10 points per game. On Monday she scored 2×10 points. On Tuesday she scored $\frac{1}{2} \times 10$ points. How do her points from Monday and Tuesday compare to her average?
- Ⓐ The number of points scored both Monday and Tuesday were lower than average.
 - Ⓑ Monday's points were higher than average and Tuesday's points were lower than average.
 - Ⓒ Monday's points were lower than average and Tuesday's points were higher than average.
 - Ⓓ The number of points scored both Monday and Tuesday were higher than average.

15 Ethan left Homer at 10:45 AM. He arrived in Anchorage 5.5 hours later. What time was it when Ethan arrived in Anchorage?

- (A) 3:45 PM
- (B) 4:15 PM
- (C) 4:35 PM
- (D) 5:15 PM

16 A furniture store has a warehouse for storing furniture. The map below shows how the warehouse is divided into separate storage areas for 4 different kinds of furniture.



Which 2 storage areas have similar shapes?

- (A) beds and entertainment centers
- (B) couches and tables & chairs
- (C) entertainment centers and tables & chairs
- (D) couches and entertainment centers



17 Kerry scored a total of 205 points last season by making a total of 120 baskets. Some of the baskets were 1-point free throws (t), and the rest were 2-point field goals (g). Which pair of equations models this situation?

- Ⓐ $t + 2g = 205$
 $t + g = 120$
- Ⓑ $t + g = 205$
 $t + 2g = 120$
- Ⓒ $t + g = 205$
 $t + g = 120$
- Ⓓ $t + 2g = 205$
 $t + 2g = 120$

18 Ivan compared the interest rates offered by 4 different banks as shown below.

$$5\frac{1}{8}\%, 5.15\%, 5.045\%, 5\frac{1}{3}\%$$

Which shows the interest rates in order from least to greatest?

- Ⓐ $5\frac{1}{8}\%, 5.15\%, 5\frac{1}{3}\%, 5.045\%$
- Ⓑ $5.045\%, 5\frac{1}{8}\%, 5.15\%, 5\frac{1}{3}\%$
- Ⓒ $5.045\%, 5\frac{1}{3}\%, 5.15\%, 5\frac{1}{8}\%$
- Ⓓ $5.15\%, 5\frac{1}{8}\%, 5.045\%, 5\frac{1}{3}\%$

- 19** The table below shows the number of hours Tory worked (h) and the total amount of money (m) she earned.

TORY'S EARNINGS

Hours (h)	Money (m)
2	17.50
3	23.75
4	30.00
5	36.25

Which equation represents the information from the table above?

- (A) $h = 6.25m$
 - (B) $h = 6.25m + 5$
 - (C) $m = 6.25h$
 - (D) $m = 6.25h + 5$
-
- 20** A fair coin is tossed 100 times resulting in 67 heads and 33 tails. Which statement **best** describes the result of the next toss?
- (A) Either heads or tails, because the outcome is independent of previous trials.
 - (B) Either heads or tails, depending on the results of the previous coin toss.
 - (C) Heads, because it has been heads so many times before.
 - (D) Tails, because fewer tails have come up before.

21 Ron had 5 cubes. Each of Ron's cubes had an edge length of 3 inches. He used the expression $5(3^3)$ to find the total volume. Which is equivalent to $5(3^3)$?

- Ⓐ 45
- Ⓑ 135
- Ⓒ 375
- Ⓓ 3,375

- 22** Ted has 8 cereal bowls in his kitchen. There are 3 green bowls, 2 pink bowls, and 3 yellow bowls. He randomly chooses 1 of these bowls each day for his cereal. Each bowl is washed and replaced before the next day. The table below shows Ted's cereal bowl color use for the past 100 days. This item is worth 4 points.

CEREAL BOWL COLOR USE

Color	Number of Times Used
green	42
pink	20
yellow	38

What is the theoretical probability of choosing a pink bowl? Explain your thinking and write the answer on the line below.

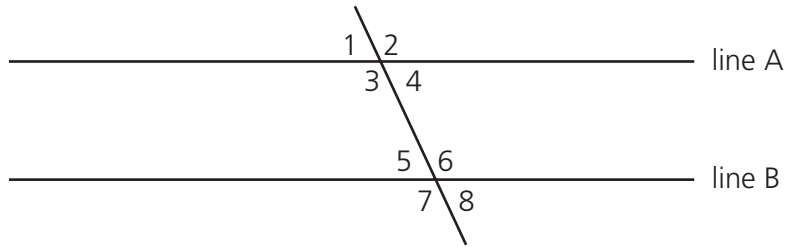
Answer: _____

What is the experimental probability of choosing a pink bowl? Explain your thinking and write the answer on the line below.

Answer: _____



- 23 In the figure below, lines A and B are straight and parallel to each other.



Which angles must be congruent to $\angle 1$?

- (A) $\angle 2$ and $\angle 6$
 - (B) $\angle 3$ and $\angle 5$
 - (C) $\angle 4$, $\angle 6$, and $\angle 7$
 - (D) $\angle 4$, $\angle 5$, and $\angle 8$
-
- 24 How many square inches are equal to 6 square feet?

- (A) 54
- (B) 72
- (C) 216
- (D) 864

- 25** The table below shows how many pages are left to copy at different times.

PAGE COPYING TIME

Seconds Spent Copying	Pages Remaining
0	60
10	49
20	38
30	27
40	?

How many pages are left to copy at the end of 40 seconds?

- Ⓐ 11
- Ⓑ 13
- Ⓒ 16
- Ⓓ 33

- 26** An economist used the equation $y = 0.05x^2 + 3.63x + 37.68$ to model changes in consumer prices. For a given value of y , which method should be used to solve the equation for x ?

- Ⓐ distance formula
- Ⓑ factoring
- Ⓒ Pythagorean theorem
- Ⓓ quadratic formula

- 27** Jeremy works at a bookstore. He gets paid \$30 per day and \$2 for every book he sells. He determines his total daily pay, D , with the equation below.

$$D = 30 + 2b, \text{ where } b \text{ is the number of books he sells}$$

On Monday, Jeremy's total daily pay is \$50. On Tuesday, Jeremy's total daily pay will change to \$35 per day and \$2 for every book he sells. Which statement is true about Jeremy's total daily pay on Tuesday?

- (A) It will be \$5 more than on Monday.
- (B) It will be \$35 more than on Monday.
- (C) It might be less than on Monday.
- (D) It might be less than \$35.

- 28** Melanie paddled her kayak for 1.5 hours. She paddled 6 miles. How many miles per hour did Melanie paddle?

- (A) 0.25 mile per hour
- (B) 4 miles per hour
- (C) 4.5 miles per hour
- (D) 9 miles per hour

- 29** A sphere had a 6-inch radius (r). What was the volume of the sphere?

- (A) 24π cubic inches
- (B) 32π cubic inches
- (C) 216π cubic inches
- (D) 288π cubic inches



30 Which line is parallel to $y = \frac{3}{4}x - 3$?

- (A) $y = -\frac{3}{4}x + 5$
- (B) $y = -\frac{4}{3}x + 5$
- (C) $y = \frac{3}{4}x + 5$
- (D) $y = \frac{4}{3}x + 5$

31 A school published the chart shown below to display their current enrollment.

SCHOOL ENROLLMENT

	Freshmen	Sophomores	Juniors	Seniors
males	12	11	18	14
females	9	11	16	19

What type of graph would **best** display all the data in the chart?

- (A) double bar graph
- (B) histogram
- (C) line plot
- (D) scatter plot

32 Gayle's hourly wage is \$8.50. Gayle will be getting a 4% increase in pay at the end of the month. What will be Gayle's hourly wage after her pay increase?


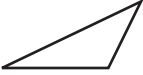



- (A) \$ 0.34
- (B) \$ 8.16
- (C) \$ 8.84
- (D) \$11.90









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Alaska Mathematics Standards Reference Sheet

Shape	Area	Circumference
 Circle	$A = \pi r^2$	$C = \pi d = 2\pi r$
 Triangle	$A = \frac{1}{2}bh$	
 Rectangle	$A = lw$	
 Trapezoid	$A = \frac{1}{2}h(b_1 + b_2)$	
 Parallelogram	$A = bh$	

Key	
b = base	ℓ = slant height
h = height	d = diameter
l = length	r = radius
w = width	B = area of base
Use 3.14 or $\frac{22}{7}$ for π .	

Shape	Volume	Total Surface Area
 Right Circular Cone	$V = \frac{1}{3}\pi r^2h$	$SA = \frac{1}{2}(2\pi r)\ell + \pi r^2 = \pi r\ell + \pi r^2$
 Square Pyramid	$V = \frac{1}{3}lwh$	$SA = 4(\frac{1}{2}l\ell) + l^2 = 2l\ell + l^2$
 Sphere	$V = \frac{4}{3}\pi r^3$	$SA = 4\pi r^2$
 Right Circular Cylinder	$V = \pi r^2h$	$SA = 2\pi rh + 2\pi r^2$
 Rectangular Solid	$V = lwh$	$SA = 2(lw) + 2(hw) + 2(lh)$
 Triangular Prism	$V = Bh$	

In the following formulas, n represents the number of sides:

In a polygon, the sum of the measures of the interior angles is equal to $180(n - 2)$.

In a regular polygon, the measure of an interior angle is equal to $180(n - 2) \div n$.

Alaska Mathematics Standards Reference Sheet

Formulas	
Slope-intercept form of an equation of a line, where m = slope and b = the y -intercept: $y = mx + b$	Distance between two points $P_1(x_1, y_1)$ and $P_2(x_2, y_2)$: $\sqrt{(x_2 - x_1)^2 + (y_2 - y_1)^2}$
Distance, rate, time formula, where d = distance, r = rate, t = time: $d = rt$	Midpoint between two points $P_1(x_1, y_1)$ and $P_2(x_2, y_2)$: $\left(\frac{x_2 + x_1}{2}, \frac{y_2 + y_1}{2} \right)$
Simple Interest = prt where p = principal, r = rate, t = time	Quadratic formula, if $ax^2 + bx + c = 0$: $x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$

Conversions	
1 yard = 3 feet = 36 inches 1 mile = 1,760 yards = 5,280 feet 1 acre = 43,560 square feet 1 hour = 60 minutes 1 minute = 60 seconds 1 liter = 1,000 milliliters = 1,000 cubic centimeters 1 meter = 100 centimeters = 1,000 millimeters 1 kilometer = 1,000 meters 1 gram = 1,000 milligrams 1 kilogram = 1,000 grams	1 cup = 8 fluid ounces 1 pint = 2 cups 1 quart = 2 pints 1 gallon = 4 quarts 1 pound = 16 ounces 1 ton = 2,000 pounds 1 meter = 3.28 feet 1 kilogram = 2.20 pounds

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Grade 10

Writing ★ Mathematics Practice Test Book
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