READING
The Friendship
by Marjorie Kinnan Rawlings

1 The little boy had a policeman for a friend. He acquired him out of a clear sky. He ran out of the schoolyard to go home for his noon lunch, tripped over a rough spot on the sidewalk, and fell so hard and so flat that for gasping moments he could not draw a breath. The policeman happened to be passing by. Robert felt himself being lifted and pounded on the back. The first breath that came was agony and wonder, for drawing it had seemed impossible. It was only with the third that he realized his knees were hurting, and he looked down to see them torn and bleeding. He became aware of the policeman and then it was unthinkable to cry.

2 He was not afraid, like the defiant older boys who gave themselves away by bragging of what they had done and intended to do to policemen. His father had often told him that the law was a protector, and if he ever found himself lost, for he was something of a roamer, he was to ask for a policeman and give his name and address. This seemed appropriate now.

3 He said, “My name is Robert Wilkinson and I live on Newton Street. I've forgotten the number.”

4 The policeman nodded his head gravely. “I know your father,” he said. “Isn’t your house the large green-and-white one?”

5 “Oh, yes. With a big snow-apple tree in the yard.”

6 The policeman again inclined his head. “My duties take me that way, Robert. I’ll walk along with you.”

7 The little boy was enchanted. The policeman’s gravity was pleasing and complimentary.

8 “That was a bad tumble, young man. Are your knees painful?”

9 “Yes, sir, they hurt terribly.”

10 “Will there be someone at home to fix you up?”

11 “Oh, yes; my mother. She’s always there when I come home for lunch.”

12 “You're lucky, Robert. I didn’t have a mother when I was your age. Eight, I’d guess?”

13 “Just six. I almost wasn't old enough to begin the first grade.” He glowed with pride that the policeman thought he was eight years old. “I thought everybody had a mother.”
“Everybody has a mother to begin with.”

“Even kittens and puppies and little birds.”

“And colts and calves and baby elephants,” said the policeman, and smiled. “But sometimes a mother can be lost.”

Robert was puzzled. “I thought only little boys got lost. I never have been, quite, but my father says he’s always expecting it.”

“Just ask for me if you’re lost. I am Sergeant Masters.”

“That’s what my father told me, to ask for a policeman and tell my name and where I live. But I can’t ever remember the number.”

“The name and the street are what matter. Your father is well known in the area where you would presumably stray.”

Robert did not quite understand all the words, but he was charmed with the truly adult conversation, with his father’s being well known, and above all with the policeman. He sighed happily, and when the policeman took his hand in crossing a street, his cup of joy ran over, and he left his small hand inside the vast one. They walked in silence down another block.

He asked, “Do you have a little boy?”

“No, Robert. I should have liked a dozen, but I shall never have a single one.”

“How can you tell?”

“Sometimes,” the policeman said, “it is possible to know.”

The sergeant at once took third place in omniscience behind God and his father, and it occurred to Robert that perhaps he should put him first. The only flaw in everything was that his protector had been unimpressed by his not crying when his knees did hurt so intensely. They reached the gate of his house. His mother stood anxiously on the front porch, since the accident had delayed him. He waved to her and she waved back.

The policeman said, “You might say to your mother that I suggest hot water first, and then an antiseptic and bandages.” He cleared his throat. “You are a very brave young man. Many boys would have cried. I usually pass your school during the noon recess, and when we meet again, I hope we may walk together.”

“Oh, I hope so too.” He recalled his manners. “Thank you, sir,” he said.

“And you are polite too. I’m sure we shall be friends.”
He tipped his cap to the lady coming down the path and strolled impressively away.

Robert cried out, “Mother, I fell down and I couldn’t breathe, and see my knees, all bleeding, and a policeman picked me up and came home with me.”

“How nice of him. Oh, darling, this is dreadful. You can’t go back to school this afternoon.”

“Of course I can go back. I’m a very brave young man.”

His mother laughed and hugged him to her, and treated his injuries as the policeman had suggested, although he forgot to tell her.

He was a little late for the afternoon session, but he went boldly into the classroom with his bandaged knees. They were their own apology, and the teacher nodded to him and went on with the lesson. He was disappointed that she did not ask him any questions, so that he could tell of his peril and of his friend.

In the evening he could hardly wait for his father to come home. He hung on the gate, watching for him. When he saw him coming down the street, he ran to him and clasped him around the legs.

“Father, I fell down and hurt myself, and a policeman brought me home.”

His father lifted quizzical eyebrows. “A policeman brought you home? Well, well. In chains, no doubt. What bad thing had you done?”

“Oh, father.” He was accustomed to his father’s jokes, and nothing could spoil his pleasure. “The policeman is my friend.”

“Well, that may come in handy someday when you’ve done something really bad.”

“Father.” The jesting was adult, too, and he ate his vegetables at dinner without his mother’s urging.

He was unable to avoid boasting at school, just a little, for Sergeant Masters was waiting for him almost every noon.

The tough boys sneered, “Who wants a cop for a friend? Yah. Bet your mamma pays him to take baby home. Yah. ‘Fraid we’ll beat you up. We don’t beat up babies. Bet she pays him a dollar a week.”

The idea had its unspeakable possibilities. His mother was often unduly solicitous. He did not dare approach her on the subject, but he did sound out the sergeant.

“Do you know my mother?” he asked one day.
“I don’t have that pleasure. But as I said before, I am acquainted with your father.”

Perhaps his father had hired the policeman. Perhaps his father had enemies and was threatened with the kidnaping of his son. This thought was exciting and acceptable, but it invalidated the friendship. He pondered over his next question. He felt very sly and clever as he asked it.

“A good policeman wouldn’t take money for walking home with anybody, would he?”

The sergeant stopped and stared down at him. “Somebody has been putting ideas in your head. No, Robert, a good policeman doesn’t take money for anything.” He laid a huge gentle hand on the little boy’s shoulder. “I am your friend. Always remember that friendship is a noble thing.”

He was comforted. And then the snow apples on the tree in the yard began to ripen and fall. They lay each morning like rosy flowers in the soft grass. By family custom these were his own, the windfalls. He invited the policeman into the yard every day and insisted on his putting an apple in all his pockets.

Sergeant Masters said invariably, “Thank you, Robert. I wish I had a little boy to take them home to. But I’ll think of you and enjoy them.”

One day the windfalls were scarce and the policeman would not take any, but said that he would prefer to think of Robert’s eating them. The next noon there was only one snow apple on the ground. This was unreasonable, as the tree was still loaded. Robert watched from behind the hedge that evening, and saw Jimmy Thomas and his sister dash into the yard and swoop to the grass and dash away again. He was in a rage. It was his apple tree, his apples. He not only liked to use them as tribute to his friend but he was passionately fond of snow apples himself.

He ran toward the house to tell his father, then halted, and in triumph decided on a superior plan. Of what avail to have a policeman for a friend, if not to use him for his vengeance?

The next noon he prayed there would be no apples on the ground. There was a disappointingly large number, but still, he was sure, not nearly so many as usual. He turned haughtily to Sergeant Masters.

“Well,” he said, “those Thomases have been over here again, stealing. I want you to arrest them and put them in jail. Right now.”
“Arrest the Thomases for stealing? Who are the Thomases?”

“A horrid boy across the street and his nasty little sister. They’ve been stealing my snow apples.”

“I see. Robert, do they have an apple tree?”

“No. But they don’t have any right to mine.”

“Have you ever given them any of your apples?”

“I don’t have to. I don’t like them. And you’re my friend, you said so, and I want you to arrest them.”

Sergeant Masters slowly took out from his pockets the apples that Robert had pressed on him and dropped them to the autumn earth.

“It’s a very large tree, Robert,” he said, “but perhaps you’d better just keep all the apples for yourself.”

Robert stared at the gift apples discarded on the ground, then up at the beloved face far above him. It was sad and stern. He drew a gasping breath more painful than the one when he had fallen flat and the policeman had pounded him on the back and had become his friend. In a moment now Sergeant Masters would walk out of the gate and be lost to him forever. He threw his arms around the strong legs and gripped them tight and hid his face against them.

A sparrow flew into the tree and chirped cheerfully in the dreadful silence. An apple dropped with a thump. A cloud drifted across the sun and the autumn air was chill. He shivered. The big hand of the policeman dropped slowly to his head and ruffled his hair. A great arm encircled him.

“It’s all right, Robert.”

The little boy burst into loud sobs of relief and shame. Friendship was a noble thing and he had proved unworthy.

“Magic” Pablo
by Mark Brazaitis

Pablo and I liked to play “Let’s imagine.” We’d be walking down the street, a basketball cradled under one of our arms. Clouds would be gathering in the east, as they tended to do in early evening. A light rain—*chipi-chipi* is what everyone in town called it—might even be falling.

“Let’s imagine,” Pablo would say, “that Michael Jordan is walking with us.” He would smile. “What would these people say?” he would ask, pointing to the woman in the dark blue *cortes* and white *huipiles*, the native dress in this town in the Northern mountains of Guatemala. “What would they do?”

“They’d be amazed,” I’d say. “They wouldn’t know what to do.” Pablo agrees.

“They’d probably run. But we’d just keep walking down the street, the three of us, to the basketball court.”

Then Pablo would ask, “And how would we divide the teams?”

“Michael Jordan versus the two of us.”

Pablo would consider this. “No,” he’d say, “it’d be you and Michael Jordan versus me.”

Pablo was sixteen when I met him, another indistinguishable face in my English class of forty-five students.

I was twenty-five when I arrived as a Peace Corps Volunteer in Santa Cruz Verapez, a town of 4,000 people. I was prepared to be alone during my entire two-year service. I figured this was the way my life was supposed to be: silent sacrifice. I wasn’t, at any rate, expecting to make a friend my first night in town.

But the night after my first English class, Pablo knocked on my door. I invited him in, and he entered, looking around shyly. On a table in my dining room, he saw a copy of *Sports Illustrated* that my stepfather had sent from home. He pointed to the cover photo.


Pablo, it turned out, knew as much about basketball and the NBA1 as I did, and I was a former sportswriter.

I don’t know where he got his information. *El Grafico*, the only daily newspaper from the capital sold in our town, rarely had stories about American basketball. A Mexican TV station that reached Santa Cruz showed NBA games on Saturday mornings, but the town’s electricity was so unpredictable—occasionally it would be off for three or four days in a row—that I wondered how many of these games he could have seen. Pablo just seemed to know, and he was familiar not just with Robert Parish and other All-Stars; he could talk about obscure players like Chris Dudley and Jerome Kersey as if he were an NBA beat reporter.

Pablo would come to my house at night and we would draft imaginary line-ups. Pablo liked non-American players. Hakeem Olajuwon was his favorite. He liked Mark Aguirre because he’d heard that Aguirre’s father was born in Mexico. Dikembe Mutombo. Manute Bol. Drazen

1 National Basketball Association
Petrovic. Selecting our imaginary teams, he’d always draft these players first.

I didn’t get it. Why would he pick Vlade Divac instead of Charles Barkley? But the longer I lived in Guatemala, the better I understood.

The American presence in Guatemala is about as subtle as a Shaquille O’Neal slam dunk. The Pepsi logo covers entire storefronts. In Santa Cruz, the town basketball court is painted with a Coca-Cola motif, right down to the backboards. In some remote villages, children wear “Ninja Turtles” tee-shirts.

We had long arguments about who was the best player in the NBA. Hakeem Olajuwon versus Michael Jordan. Hakeem versus Patrick Ewing. Hakeem versus Magic Johnson.

Pablo stuck by his man.

Pablo and I played basketball on the court next to the cow pasture. Pablo was taller than Muggsy Bogues but shorter than Spud Webb, both of whom played in the NBA. When we first began playing, I could move him around with my body, backing him close to the basket. If I missed, I was tall enough to get a rebound. In games to twenty-one, I would beat him by nine, eleven, thirteen points.

We mourned together. Feeling sentimental, Pablo admitted, “Magic might be better than Hakeem.”

Pablo’s dream was to dunk a basketball. We calculated how many feet he would need to jump—about four.

Pablo drew up a training plan. He would jump rope two hours a day to build his leg strength. Every other day, Pablo would ask his younger brother to crouch, and he would leap, back and forth, for half an hour.

Two weeks later, Pablo came to my house and asked me to set up a hurdle in my courtyard. I stacked two chairs on top of each other, then another two chairs a few feet away. I placed a broom across the top of the chairs and measured: the broom was four feet off the ground.

“I’m going to jump it,” Pablo said.

“You sure?” I asked.

“Yes, I’m sure.”

We stood there, gazing at the broom.

“You sure?” I asked again.

“I’m sure.”

More gazing.

Then he backed up, took a few quick steps, and jumped. His knees shot to his chest. He leapt over the broom like a frog.

“You did it!” I yelled.

“I can dunk now,” he said, grinning.

The next morning, we went to the basketball court. Pablo dribbled from half
court and leapt. The ball clanked off the rim. He tried it again. Same result.

“I don’t understand,” he said.

I didn’t have the heart to admit I’d misled him: to dunk, he’d have to jump four feet without bending his knees.

As a player, though, Pablo was getting better. He couldn’t dunk, but he’d learned to use his quickness to drive by me and score. He had grown stronger. I could not back into him as easily.

Also, he had developed a jump shot.

“Let’s imagine,” Pablo would say, “that David Robinson came to visit us.”

“All right,” I’d say.

“Where would he stay?”

“I don’t know. At a hotel, probably.”

“No,” Pablo would say, “he’d stay at your house. You’d let him sleep in your bed.”

“Yeah, that would be better.”

“And you’d make him dinner.”

“Sure.”

“And at night,” Pablo would say, “we’d sit around and talk about basketball.”

Pablo was not my best student. He was more interested in basketball than books. But he knew how to make his teacher laugh.

When he missed a quiz, I allowed him to make it up by writing five sentences—any five sentences of his choice—in English.

He wrote:

1. Charles Barkley sang a song in my house.

2. I beat Patrick Ewing in slam dunk.

3. I beat David Robinson in block.

4. Hakeem Olajuwon is my brother.

5. Magic and Pablo are the best friends of Mark.

Despite his interest in basketball, Pablo’s best sport was soccer. He played for San Pedro Carcha, a nearby town. Pablo was a good play-maker. Quick dribbler. Good passer. Soccer’s equivalent of a point-guard, not a power forward.

I’d seen several of Pablo’s games and had watched him make gorgeous passes, beautiful sky-touching passes that his teammates batted into the net for goals.

My last week in Guatemala as a Peace Corps Volunteer, I attended a game Pablo’s team played against San Cristobal, a town nine kilometers west of Santa Cruz. The game was tied 1–1 going into the final minutes. Pablo’s team had a corner kick. The crowd, about a thousand strong, was silent.

The ball soared into the air. A mass of players, including Pablo, gathered to receive it. Pablo jumped, his body shooting up like a rocket off a launcher. His timing was perfect. His head met the ball and the ball flew past the goalie.

Pablo’s teammates paraded him around the field on their shoulders. People from the crowd, per custom, handed him money.

When I talked to him later, I didn’t need to point out why he’d been able to jump that high. He said it himself. “It’s
basketball. I learned it from basketball. From trying to dunk.”

We played our last game the day before I left Guatemala. We played in the evening, as a light rain—a chipi-chipi—fell.

He had learned to play defense. I tried to back him toward the basket, but he held his ground. I was forced to use my unreliable jump shot. I could no longer get every rebound because he’d learned to block out. And, of course, he could jump now.

I got lucky and hit two straight jumpers to pull ahead by four. But he countered with a reverse lay-up. He scored again on a long jump shot, a shot he never would have made when we first played.

The rain fell harder now. Puddles were beginning to form on the court. Pablo and I were both panting. It was getting dark; we could barely see the basket.

“Let’s quit,” I said. “Let’s leave it like this.”

“If you want,” he said.

“Yeah, let’s leave it like this. A tie.”

“All right,” he said. “A tie. Good. Let’s leave it.”

We hugged each other.

“Let’s imagine,” Pablo said, as we walked to my house for the last time, “that you and I played against Michael Jordan. Who would win?”

“Jordan,” I said.

“No,” Pablo said. “We would. Believe me, we would.”
To make a friend . . .

you have to be a friend.

Working in communities across the country to bring adults, children, and teens together for fun and learning

The Friendship League

Call 1-888-555-6248 to volunteer.

Photographs courtesy of © Barnaby Hall/CORBIS.
Use “The Friendship” (pp. 4–8) to answer questions 1–14.

1 Which word from paragraph 53 helps the reader understand the meaning of the word *avail*?
   A toward
   B triumph
   C use
   D vengeance

2 Paragraph 21 is mainly about Robert’s —
   F fear of crossing the street alone
   G inability to understand Sergeant Masters’s words
   H delight at receiving attention from Sergeant Masters
   J size in comparison to Sergeant Masters’s size

3 It is a family tradition that Robert —
   A can have all the apples that fall on the ground
   B must eat all his vegetables at dinner without being urged
   C always walks home from school by himself
   D must give any extra apples to the neighborhood children

4 Read the following dictionary entry.
   **tough** \ˈtaf\ adj 1. strong or firm in texture
   2. glutinous; sticky 3. capable of enduring hardship 4. unruly; rowdy

   Which definition best matches the meaning of the word *tough* as it is used in paragraph 43 of the story?
   F Definition 1
   G Definition 2
   H Definition 3
   J Definition 4

5 Paragraphs 44 through 48 are mostly about —
   A whether Sergeant Masters is acquainted with Robert’s mother
   B Robert’s fantasy that his father may have dangerous enemies
   C whether Sergeant Masters is a good and trustworthy policeman
   D Robert’s attempts to discover whether his parents pay Sergeant Masters

6 Robert’s internal conflict stems from his —
   F fear that Sergeant Masters will punish him
   G anger when Sergeant Masters drops the apples
   H knowledge that Sergeant Masters is disappointed in him
   J embarrassment about walking home with Sergeant Masters
Robert's character is best revealed through —
A what others say about him
B his actions toward others
C dialogue with his parents
D the way the policeman describes him

In paragraph 50, the author uses a simile to —
F show the softness of the grass
G illustrate the beauty of the garden
H convey the attraction of the snow apples
J describe the pleasure of gathering fallen apples

In this story, the snow-apple tree symbolizes the fact that true friends —
A share special gifts only with other friends
B enjoy spending quality time working together
C give of themselves while expecting nothing in return
D take gifts even when they do not want them

The theme of friendship in the story is best revealed through —
F Robert's relationship with his parents
G Sergeant Masters's actions toward Robert
H Robert's actions toward the neighbor children
J Sergeant Masters's relationship with Robert's father

Which line from the story best reveals Sergeant Masters's disappointment in Robert?
A "It's a very large tree, Robert," he said, "but perhaps you'd better just keep all the apples for yourself."
B "Your father is well known in the area where you would presumably stray."
C A cloud drifted across the sun and the autumn air was chill.
D The only flaw in everything was that his protector had been unimpressed by his not crying when his knees did hurt so intensely.

Robert's major conflict begins when he —
F falls and skins his knees
G brags to the children at school about his friendship with Sergeant Masters
H insists that Sergeant Masters arrest the Thomases
J is late getting to class after his accident

Robert eats all his vegetables at dinner because —
A his mother urges him to do so
B he is in a hurry to leave the table
C his father is displeased with him
D he enjoys being treated like a grown-up

Why doesn't Robert cry when he falls down?
F He thinks that the older boys will tease him.
G He is afraid of what his father will say.
H He wants to impress Sergeant Masters.
J He is embarrassed by his clumsiness.
Use “‘Magic’ Pablo” (pp. 9–12) to answer questions 15–27.

15 This article is mainly about —
   A two friends who helped each other improve their basketball-playing ability
   B the friendship that grew between a Peace Corps volunteer and one of his students
   C a young man’s experiences with the citizens of Santa Cruz Verapez, Guatemala
   D why some people aspire to play basketball as well as NBA professionals do

16 Which of these is an antonym for the word obscure in paragraph 13?
   F Famous
   G Talented
   H Friendly
   J Simple

17 The author was sent to Guatemala to —
   A coach basketball
   B write sports stories
   C teach English
   D take photographs

18 Read the following dictionary entry.
   beat \bêt\ n 1. a single stroke or blow 2. a generation of unconventional young people of the 1950s 3. a group of news sources that a reporter covers regularly 4. a metrical or rhythmic stress in poetry or music
   Which definition best matches the meaning of the word beat as it is used in paragraph 13 of the article?
   F Definition 1
   G Definition 2
   H Definition 3
   J Definition 4

19 Paragraphs 8 through 11 represent a —
   A foreshadowing of the author’s experience in Guatemala
   B flashback to the author’s first encounter with Pablo
   C change in the article’s point of view
   D description of the author’s life before the Peace Corps

20 The theme of friendship is best demonstrated through —
   F the author’s commitment to the Peace Corps
   G an imaginary meeting between Pablo and Michael Jordan
   H the author and Pablo’s shared interest in basketball
   J the relationship between the author and his students

21 Which sentence from the article best helps the reader understand the author’s feelings about the setting?
   A I was prepared to be alone during my entire two-year service.
   B In some remote villages, children wear “Ninja Turtles” tee-shirts.
   C El Grafico, the only daily newspaper from the capital sold in our town, rarely had stories about American basketball.
   D On a table in my dining room, he saw a copy of Sports Illustrated that my stepfather had sent from home.
22 In paragraph 59, the author uses a simile to —

- F describe how a rocket looks at liftoff
- G show that Pablo is a good soccer player
- H explain how to pass the ball in soccer
- J emphasize the power of Pablo’s jump

23 The reader can tell from the article that Peace Corps volunteers —

- A spend months in training
- B work in foreign countries
- C teach people about farming
- D often become professional sportswriters

24 Which sentence from the article best summarizes the author’s initial expectations about his life as a Peace Corps volunteer?

- F I was twenty-five when I arrived as a Peace Corps Volunteer in Santa Cruz Verapez, a town of 4,000 people.
- G I figured this was the way my life was supposed to be: silent sacrifice.
- H In Santa Cruz, the town basketball court is painted with a Coca-Cola motif, right down to the backboards.
- J Pablo, it turned out, knew as much about basketball and the NBA as I did, and I was a former sportswriter.

25 The author develops the article by —

- A explaining how he formed a friendship with a Guatemalan student
- B comparing the skills needed for playing basketball and soccer
- C describing the influence of U.S. popular culture on Guatemalan students
- D analyzing differences between young people in Guatemala and in the United States

26 In trying to achieve his goal of dunking a basketball, Pablo could best be described as —

- F unfocused
- G restrained
- H disciplined
- J casual

27 It is reasonable to predict that —

- A Pablo and the author stayed in touch with each other
- B the author will return to Guatemala for another two years
- C Pablo became a well-known professional soccer player
- D the author and Pablo got to play a game with Michael Jordan
Use “The Friendship” and “‘Magic’ Pablo” (pp. 4–12) to answer questions 28–30.

28 Unlike Pablo, Robert —

- F shares ideas with an older friend
- G disappoints his older friend
- H attends school regularly
- J meets an older friend after school

29 The personalities of Sergeant Masters and Mark Brazaitis are best revealed —

- A by what others in the selections say about them
- B through the thoughts of the narrator
- C by the way they are described in the selection
- D through their interactions with a younger person

30 Based on the selections, both Sergeant Masters and Mark Brazaitis can be described as —

- F sentimental
- G nurturing
- H imposing
- J outgoing
31 The photographs were probably chosen to —
A show popular individuals in the photographer’s community
B appeal mainly to volunteers who like to work with large groups
C emphasize the many kinds of people who can be friends
D provide examples of specific people who need to be helped

32 The advertisement implies that an individual can be a friend by —
F learning about many different kinds of people
G becoming a Friendship League volunteer
H visiting communities all around the country
J spending time talking on the telephone

33 The reader can conclude that a primary purpose of the Friendship League is to —
A bridge the gap across generations
B bring people together from different countries
C tutor children in specific subjects
D prepare teens for future jobs
DIRECTIONS

Answer the following questions in the space provided on the answer document.

34 In “The Friendship,” what does Robert learn from his experience with Sergeant Masters? Support your answer with evidence from the story.

35 Why do you think the author and Pablo decided to leave their last basketball game in a tie in “Magic’ Pablo”? Support your answer with evidence from the selection.

36 How is the idea of friendship important in both “The Friendship” and “‘Magic’ Pablo”? Support your answer with evidence from both selections.
# Mathematics Chart

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## TIME

- 1 year = 365 days
- 1 year = 12 months
- 1 year = 52 weeks
- 1 week = 7 days
- 1 day = 24 hours
- 1 hour = 60 minutes
- 1 minute = 60 seconds

Metric and customary rulers can be found on the separate Mathematics Chart.
# Mathematics Chart

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<td>rectangle</td>
<td>$A = lw$ or $A = bh$</td>
</tr>
<tr>
<td></td>
<td>triangle</td>
<td>$A = \frac{1}{2} bh$ or $A = \frac{bh}{2}$</td>
</tr>
<tr>
<td></td>
<td>trapezoid</td>
<td>$A = \frac{1}{2} (b_1 + b_2)h$ or $A = \frac{(b_1 + b_2)h}{2}$</td>
</tr>
<tr>
<td></td>
<td>circle</td>
<td>$A = \pi r^2$</td>
</tr>
<tr>
<td>Surface Area</td>
<td>cube</td>
<td>$S = 6s^2$</td>
</tr>
<tr>
<td></td>
<td>cylinder (lateral)</td>
<td>$S = 2\pi rh$</td>
</tr>
<tr>
<td></td>
<td>cylinder (total)</td>
<td>$S = 2\pi rh + 2\pi r^2$ or $S = 2\pi r(h + r)$</td>
</tr>
<tr>
<td></td>
<td>cone (lateral)</td>
<td>$S = \pi rl$</td>
</tr>
<tr>
<td></td>
<td>cone (total)</td>
<td>$S = \pi rl + \pi r^2$ or $S = \pi r(l + r)$</td>
</tr>
<tr>
<td></td>
<td>sphere</td>
<td>$S = 4\pi r^2$</td>
</tr>
<tr>
<td>Volume</td>
<td>prism or cylinder</td>
<td>$V = Bh^*$</td>
</tr>
<tr>
<td></td>
<td>pyramid or cone</td>
<td>$V = \frac{1}{3} Bh^*$</td>
</tr>
<tr>
<td></td>
<td>sphere</td>
<td>$V = \frac{4}{3} \pi r^3$</td>
</tr>
</tbody>
</table>

*B represents the area of the Base of a solid figure.

<table>
<thead>
<tr>
<th>Pi</th>
<th>$\pi$</th>
<th>$\pi \approx 3.14$ or $\pi \approx \frac{22}{7}$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pythagorean Theorem</td>
<td>$a^2 + b^2 = c^2$</td>
<td></td>
</tr>
<tr>
<td>Distance Formula</td>
<td>$d = \sqrt{(x_2 - x_1)^2 + (y_2 - y_1)^2}$</td>
<td></td>
</tr>
<tr>
<td>Slope of a Line</td>
<td>$m = \frac{y_2 - y_1}{x_2 - x_1}$</td>
<td></td>
</tr>
<tr>
<td>Midpoint Formula</td>
<td>$M = \left( \frac{x_1 + x_2}{2}, \frac{y_1 + y_2}{2} \right)$</td>
<td></td>
</tr>
<tr>
<td>Quadratic Formula</td>
<td>$x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$</td>
<td></td>
</tr>
<tr>
<td>Slope-Intercept Form of an Equation</td>
<td>$y = mx + b$</td>
<td></td>
</tr>
<tr>
<td>Point-Slope Form of an Equation</td>
<td>$y - y_1 = m(x - x_1)$</td>
<td></td>
</tr>
<tr>
<td>Standard Form of an Equation</td>
<td>$Ax + By = C$</td>
<td></td>
</tr>
<tr>
<td>Simple Interest Formula</td>
<td>$I = prt$</td>
<td></td>
</tr>
</tbody>
</table>
DIRECTIONS

Read each question. Then fill in the correct answer on your answer document. If a correct answer is not here, mark the letter for “Not here.”

SAMPLE A

Find the slope of the line $2y = 8x - 3$.

A $-\frac{3}{2}$

B 4

C 8

D Not here

SAMPLE B

Janice uses a rectangular box to store her art supplies. The dimensions of the rectangular box are 22.5 inches by 14 inches by 11.5 inches. What is the volume of this box in cubic inches?

Record your answer and fill in the bubbles on your answer document. Be sure to use the correct place value.
1. If \( \triangle TSR \) is similar to \( \triangle TNM \), what is the length of \( x \)?

2. How would the graph of the function \( y = x^2 + 4 \) be affected if the function were changed to \( y = x^2 + 1 \)?

3. The table shows the results of a survey given to 450 graduating seniors about their educational plans after high school.

<table>
<thead>
<tr>
<th>Educational Plans</th>
<th>Institution</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>University</td>
<td>44</td>
</tr>
<tr>
<td></td>
<td>Community college</td>
<td>26</td>
</tr>
<tr>
<td></td>
<td>Technical school</td>
<td>15</td>
</tr>
<tr>
<td></td>
<td>Undecided</td>
<td>15</td>
</tr>
</tbody>
</table>

Based on these data, which of the following statements is true?

- A. Only 15 students have no future educational plans.
- B. More students plan to attend a community college or technical school than plan to attend a university.
- C. Fewer than half of the students plan to attend a university.
- D. Fewer than one-fourth of the students plan to attend a community college.
4. The drawing shows a 3-dimensional solid.

Which best represents the shape of the solid when viewed from the top?

- F Pentagonal
- G Hexagonal
- H Heptagonal
- J Octagonal

5. A recycling center pays $0.35 per pound of glass that it receives. If students at Falcon High School want to raise $500 in a glass-recycling project, what is a reasonable number of pounds of glass they must collect?

- A 750 lb
- B 175 lb
- C 500 lb
- D 1500 lb

6. Triangle XYZ is translated so that X is mapped to X'.

Which coordinate pair best represents Y'?

- F (-3, -8)
- G (2, -7)
- H (2, -6)
- J (2, -2)

7. A weather balloon is launched from a height of 475 feet above sea level. If the balloon rises at a constant rate of 85 feet per minute, which equation could be used to determine t, the time in minutes it will take the balloon to reach a height of 9245 feet above sea level?

- A 9245 = 85 + 475t
- B 9245 = 85(t + 475)
- C 9245 = 475 + 85t
- D 9245 = (475 + 85)t
8 Which graph shows a function \( y = x^2 + c \) when \( c < -1 \)?

- F
- H
- G
- J

9 Which expression is equivalent to \( \frac{(8x^4)(2x^7)}{4x^6} \)?

- A \( 4x^9 \)
- B \( 4x^2 \)
- C \( 2x^8 \)
- D \( 2x^4 \)

10 Which equation describes a line that has a y-intercept of 5 and a slope of \( \frac{1}{2} \)?

- F \( y = 5 + \frac{1}{2}x \)
- G \( y = (5 + x)\frac{1}{2} \)
- H \( y = 5x + \frac{1}{2} \)
- J \( y = (5x + 1)\frac{1}{2} \)
11 Antonio works 40 hours per week at Electronics Warehouse. He earns $6.50 per hour plus a 3% commission on the total dollar value of the service contracts he sells. If Antonio's hourly rate were increased by $0.15 and his commission were raised to 5%, how much would he earn if he sold $4000 worth of service contracts for the week?

A $126.50
B $206.65
C $466.00
D $580.00

12 The figure below shows a partial view of Pascal's triangle.

**Pascal's Triangle**

Row 1: 1
Row 2: 1 1
Row 3: 1 2 1
Row 4: 1 3 3 1
Row 5: 1 4 6 4 1

Which row of numbers best represents the seventh row in Pascal's triangle?

F 1 5 10 10 5 1
G 1 6 15 20 15 6 1
H 1 7 21 35 35 21 7 1
J 1 8 28 56 70 56 28 9 1

13 Which function includes the data set \{(2, 4), (6, 6), (12, 9)\}?

A \(y = 2x\)
B \(y = \frac{x}{2}\)
C \(y = 2x - 9\)
D \(y = \frac{x}{2} + 3\)

14 The graph below shows the amount of time Dennis spent studying over a 2-week period in October.

**Study Time**

Which of the following statements would be an invalid conclusion for these data?

F Dennis spent a total of 660 minutes studying.
G Dennis studied for an average of about 47 minutes per day.
H Dennis studied for an average of 330 minutes per week.
J Dennis earned good grades during this 2-week period.
15 Mr. Collins invested some money that will double in value every 12 years. If he invested $5,000 on the day of his daughter’s birth, how much will the investment be worth on his daughter’s 60th birthday?

A $300,000  
B $160,000  
C $80,000  
D $320,000

16 The area of a rectangle is $3x^2 + 14x + 8$, and the width is $x + 4$. Which expression best describes the rectangle’s length?

F $3x + 2$  
G $2x + 4$  
H $2x + 2$  
J $3x - 2$

17 If $(x, -4)$ is a solution to the equation $4x - 5y = 8$, what is the value of $x$?

A $-4.8$  
B $-3$  
C $1.6$  
D $7$

18 ΔDFG has vertices $D (2, 4)$, $F (4, 8)$, and $G (6, 4)$.

ΔDFG is dilated by a scale factor of $\frac{1}{4}$ and has the origin as the center of dilation. What are the coordinates of $F''$?

F $(1, 2)$  
G $\left(\frac{1}{2}, 1\right)$  
H $(16, 32)$  
J $\left(\frac{3}{2}, 1\right)$
19 What is the slope of the linear function shown in the graph?

![Graph of a linear function]

A $-\frac{7}{4}$
B $-\frac{4}{7}$
C $\frac{4}{7}$
D $\frac{7}{4}$

20 Simplify the algebraic expression $3(x + 3) - 2(x + 3)$.

F $x + 3$
G $x - 3$
H $-6x^2 - 54$
J $6x^2 + 3$
Based on the table, how many diagonals should a 9-sided convex polygon have?

Record your answer and fill in the bubbles on your answer document. Be sure to use the correct place value.
22  A cylindrical water tank has a radius of 2.8 feet and a height of 5.6 feet. The water tank is filled to the top. If water can be pumped out at a rate of 36 cubic feet per minute, about how long will it take to empty the water tank?

F  3 h  
G  2 h  
H  4 min  
J  1 min

23  The amount of material needed to make a basketball best represents the ball's —

A  volume  
B  surface area  
C  circumference  
D  perimeter
Jerome received a gift card for $20 worth of video rentals from a video store. If the cost of renting a video is $2.50, which table best describes \( b \), the balance remaining on the gift card after he rents \( n \) videos?

<table>
<thead>
<tr>
<th>( n )</th>
<th>( b )</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>$20.00</td>
</tr>
<tr>
<td>1</td>
<td>$17.50</td>
</tr>
<tr>
<td>2</td>
<td>$15.00</td>
</tr>
<tr>
<td>4</td>
<td>$10.00</td>
</tr>
<tr>
<td>6</td>
<td>$5.00</td>
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</table>

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<tr>
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<tr>
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<td>$11.00</td>
</tr>
<tr>
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<td>$8.50</td>
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</table>

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<tr>
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</tr>
<tr>
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</tr>
<tr>
<td>6</td>
<td>$2.50</td>
</tr>
<tr>
<td>8</td>
<td>$0.00</td>
</tr>
</tbody>
</table>
25 Which of the following is a valid conclusion based on the diagram shown above?

A  All rhombuses are squares.
B  All rhombuses are rectangles.
C  All quadrilaterals are parallelograms.
D  All rectangles are parallelograms.

26 A square park has a diagonal walkway from 1 corner to another. If the walkway is about 38 yards long, what is the approximate length of each side of the park?

F  6 yd
G  19 yd
H  27 yd
J  54 yd
27. The temperature in degrees Celsius, \( C \), is \( \frac{5}{9} \) of the difference between the temperature in degrees Fahrenheit, \( F \), and the constant 32. Which equation best represents this relationship?

- A. \( C = \frac{5}{9} - (F + 32) \)
- B. \( C = \frac{5}{9}(F + 32) \)
- C. \( C = \frac{5}{9}(F - 32) \)
- D. \( C = \frac{5}{9} - F + 32 \)

28. Sean is an Algebra I student who believes that \( xy^2 = (xy)^2 \). Rudy informs Sean that this theory is not always true. Which pair of values for \( x \) and \( y \) could Rudy use to disprove Sean’s theory?

- F. \( x = 0 \) and \( y = 2 \)
- G. \( x = 1 \) and \( y = 2 \)
- H. \( x = 2 \) and \( y = 0 \)
- J. \( x = 2 \) and \( y = 1 \)

29. Tony and Edwin each built a rectangular garden. Tony’s garden is twice as long and twice as wide as Edwin’s garden. If the area of Edwin’s garden is 600 square feet, what is the area of Tony’s garden?

- A. 1200 ft \(^2\)
- B. 2400 ft \(^2\)
- C. 3600 ft \(^2\)
- D. 4800 ft \(^2\)

30. An artist made a drawing of a house with a tree next to it. The drawing is \( \frac{1}{18} \) the size of the actual house and tree. The tallest point of the house is 12 feet 8 inches, and the tree is 27 feet tall. How many inches tall is the tree in the drawing?

- F. 8.4 in.
- G. 18 in.
- H. 23.4 in.
- J. 486 in.
31. $\triangle MNP \sim \triangle RST$ is shown below.

Which scale factor was used to transform $\triangle MNP$ to $\triangle RST$?

A. $\frac{1}{3}$

B. $\frac{1}{2}$

C. $\frac{2}{7}$

D. 5
A spinner was spun 20 times. The results are shown in the table below.

Which color on the spinner has the same experimental probability as theoretical probability?

- **F** Red
- **G** White
- **H** Blue
- **J** Yellow
33 The drawing below shows 3 square parking lots that enclose a grassy area shaped like a right triangle.

If Lot A’s perimeter is 300 yards and Lot B’s perimeter is 400 yards, what is the perimeter of Lot C?

- **A** 500 yd
- **B** 700 yd
- **C** 1400 yd
- **D** 2000 yd

34 The line segment on the graph shows the altitude of a landing airplane from the time its wheels are lowered to the time it touches the ground. Which of the following best describes the slope of the line segment?

- **F** The plane descends about 1 foot per 8 seconds.
- **G** The plane descends about 8 feet per second.
- **H** The plane descends about 1 foot per 2 seconds.
- **J** The plane descends about 2 feet per second.
35 The net of a cube is shown below.

Use the ruler on the Mathematics Chart to measure the dimensions of the cube to the nearest $\frac{1}{4}$ inch. Find the surface area of the cube to the nearest square inch.

A 2 in.$^2$
B 9 in.$^2$
C 14 in.$^2$
D 18 in.$^2$
36 The graphs of the linear equations $y = 2x - 3$ and $y = 3x - 7$ are shown below.

If $2x - 3 = 3x - 7$, what is the value of $x$?

F  4
G  5
H  9
J  10

37 The scale factor of two similar polygons is 2:3. The perimeter of the larger polygon is 150 centimeters. What is the perimeter of the smaller polygon?

A  100 cm
B  75 cm
C  50 cm
D  150 cm

38 Adam’s age is 4 years less than twice Blanca’s age. If Adam is 16 years old, which equation can be used to determine Blanca’s age?

F  $2(x - 4) = 16$
G  $2x - 4 = 16$
H  $4 - 2x = 16$
J  $2(4 - x) = 16$

39 The Frosty Ice-Cream Shop sells sundaes for $2 and banana splits for $3. On a hot summer day, the shop sold 8 more sundaes than banana splits and made $156. Which system of equations could be used to find the number of sundaes, $s$, and banana splits, $b$, that the shop sold that day?

A  $2s + 3b = 156$
    $s = b + 8$
B  $2b + 3s = 156$
    $s + b = 8$
C  $2s + 3b = 8$
    $s = b + 156$
D  $2s + 3b = 156$
    $b - s = 8$
Students in two honors history classes took their first test. Of 40 students taking the test, 12 received an A, 16 received a B, 8 received a C, 2 received a D, and the remaining received an F. Which circle graph best represents these data?
41 Which equation could be used to generate this table of values?

<table>
<thead>
<tr>
<th>x</th>
<th>y</th>
</tr>
</thead>
<tbody>
<tr>
<td>-1</td>
<td>2</td>
</tr>
<tr>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>2</td>
<td>5</td>
</tr>
</tbody>
</table>

A  \( y = -2x \)
B  \( y = 2x + 1 \)
C  \( y = x + 1 \)
D  \( y = x^2 + 1 \)

42 What are the x- and y-intercepts of the function graphed below?

F  (4, 0) and (5, 0)
G  (4, 0) and (0, 5)
H  (0, 4) and (5, 0)
J  (0, 4) and (0, 5)

43 Sue wants to write an expression that will always produce an even integer. Which of the following will always produce an even integer for any given integer, \( n \)?

A  \( 2n + 1 \)
B  \( 2n - 1 \)
C  \( n + 2 \)
D  \( 2n \)

44 If \( y = x^3 \), what is equivalent to \( x^{12} \)?

F  \( y^{36} \)
G  \( y^{15} \)
H  \( y^5 \)
J  \( y^4 \)

45 A class consists of 8 freshmen and 22 sophomores. Freshmen had an average of \( x \) points on a test, while sophomores had an average of \( y \) points. Which expression gives the average test score per student for the entire class?

A  \( \frac{8x + 22y}{30} \)
B  \( \frac{22x + 8y}{30} \)
C  \( 30(\frac{8}{x} + \frac{y}{22}) \)
D  \( \frac{x + y}{2} \)
46 Which graph best represents the relationship between the height of a burning candle and the amount of time that passes as the candle burns?

- F
- H
- G
- J
47 Which statement is true for the graph below?

![Graph of Salesperson's Total Earnings vs. Sales (thousands of dollars)]

**A** Ms. Goodlett will earn $500 if she sells $5000 worth of merchandise.

**B** Mr. Murphy will not earn any money if he does not sell any merchandise.

**C** Mr. Laster will earn $1000 if he sells $1000 worth of merchandise.

**D** Ms. Cho will earn $700 if she sells $5000 worth of merchandise.

48 Jake's square backyard covers an area of 104 square meters. How can Jake best determine the length of each side of his backyard?

**F** Divide the area by the number of sides

**G** Square the area

**H** Find the square root of the area

**J** Divide the area in half

49 Ms. Hill wants to carpet her rectangular living room, which measures 14 feet by 11 feet. If the carpet she wants to purchase costs $1.50 per square foot, including tax, how much will it cost to carpet her living room?

**A** $50

**B** $75

**C** $154

**D** $231

50 Which equation best describes the relationship between the corresponding values of \( x \) and \( y \) shown in the table?

<table>
<thead>
<tr>
<th>( x )</th>
<th>( y )</th>
</tr>
</thead>
<tbody>
<tr>
<td>-2</td>
<td>-12</td>
</tr>
<tr>
<td>0</td>
<td>-6</td>
</tr>
<tr>
<td>1</td>
<td>-3</td>
</tr>
<tr>
<td>4</td>
<td>6</td>
</tr>
</tbody>
</table>

**F** \( y = x - 10 \)

**G** \( y = 2x - 8 \)

**H** \( y = 3x - 6 \)

**J** \( y = x^2 - 8 \)
51 A middle school band must be at the contest site by 8:00 A.M. to participate in a competition. It takes 45 minutes to load the bus with the band's equipment, and it takes 1 hour 45 minutes to travel to the contest site. What should be the first step in determining the band's departure time?

A Add the time it takes to travel to the contest site to 8:00 A.M.
B Add the time it takes to load the bus to 8:00 A.M.
C Add the travel time and loading time together
D Subtract the loading time from the travel time

52 \( \triangle KLM \) has coordinates \( K(-8, 3), L(-4, 1), \) and \( M(-2, 7) \). What will be the new coordinates of point \( M \) if the triangle is translated 4 units to the right and 3 units down?

\[ M(0,-2) \]
\[ G(2,4) \]
\[ H(-4,0) \]
\[ J(-6,4) \]