

BARTON ON THE RIGHT TRAIL



BY

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(Ages 8 and over)

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AUNTY'S GIFT

Barton loved to observe the younger children at school. He looked at them as they played, laughed, chatted, and had fun. Then, Barton would try to recall if he behaved similarly when he was their age. Sometimes he might recall such similarities and he would laugh as he did so. But often too, he would observe some rather unusual actions that were never part of his diary of past events. Generally, though, Barton found the antics and the behaviour of the younger children, to be rather funny.

This lunchtime, Barton sat together with Dane on a bench. The two opted out of heavy physical activity at this time. They were content to look on at Sian, Shanna, Malaika, Alfredo and the others shout and play. Kwame sat not too far from Dane and Barton on another bench. Kwame was the self-appointed coach, manager, and trainer of both Dane and Barton. It would have been uncomfortable, if not impossible, for the three close friends to be sitting on the same bench.

Barton and Dane were due to represent the school in an important soccer match later on that afternoon and thought they would conserve their energy. Not only did they think it best to relax during the luncheon period, but it was sanctioned by a simple, yet firm order from the plump personal coach.

Though Kwame was as young as they were and would not have had any formal training in the field of coaching, the boys found him to be quite

knowledgeable. The tips and advice that he gave to them were sound. Kwame's exercise regimes for the specific sports engaged in by Dane and Barton were very suitable and quite helpful. Furthermore, both boys learned to accept and obey them without question. Neither questioned Kwame's source of knowledge. Both suspected, though, that Kwame was a subscriber and follower of some of the top sports magazines that were available.

Barton and Dane were tall, strong, and excellent sportsmen for their age. Their performances, especially on the soccer field, often gave the fans much to cheer about. Everyone looked forward to the game, good performances, and eventual victory when they played. At this time, though, the 'sports twins' sat quietly. However, their immobility did not prevent them from observing the youngsters at play. The two laughed as they remembered when, as little boys, they were almost inseparable. Together, they had learned to tell the time from a watch that Dane's Aunt had given to him as a gift. Then too, they built and assembled toy models, ate, studied, shared much and played alongside each other. As the two reminisced, their keen eyes observed the peculiar behaviour of two little girls.



The two girls would read from a book and one or both would be seen to write. Then the taller one would be seen gesticulating, as though in anger or disgust. The procedure would be replayed several times until finally the taller of the girls, flung the book in a nearby bin. Barton and Dane looked at each other and without saying a word the two rose from their seats and headed off in that direction. The two girls had now sat down, facing forward and in silence. Both their faces expressed deep scowls.

“I am seeing two angry girls before me,” greeted Barton.

But despite his peculiar introduction, there was no response from either of the girls. They seemed to look angrier than before.

“Are you angry with each other?” asked Dane.

“No, we are not,” they replied together. “We are angry with mathematics,” said one of the girls, in a rather frigid tone.

“But why are you angry with the great discipline called mathematics?” asked Barton. “Mathematics is important, it is precise, it is also referred to as the language of the sciences, and we need a fair knowledge of mathematics to even exist in today’s World,” argued Barton.

“Was that a mathematics book that you so angrily dumped in the waste paper bin a short while ago?” asked Dane.



“It was a book on mathematics sequences and puzzles,” replied the taller girl. “I am Elaine and this is my friend Eleanor,” she said, pointing to her friend who stood alongside her.

“My Aunty Sophia gave me a book on series, sequences, puzzles, and number patterns,” explained Elaine to the two keen listeners. “I remember Miss telling us that there is only one answer to a mathematics question, though there may be more than one method in working the question,” she continued. “We were working the questions and some of them don’t seem to have the correct answer when we check in the back and worse is that some of the questions have more than one answer,” she said, raising her hands in the air in a show of desperation.

“We are both fed up and frustrated and angry,” stated Eleanor. “That is why Elaine threw the book in the bin. Now, we have no more problems. The ugly book has been dumped and we are free once again, no longer trapped within the strangling arms of mathematics.”

Barton meanwhile, had walked across and retrieved the book. Luckily it was not soiled or damaged. The nearby bins were recently emptied by the janitorial staff and clean bags were placed in them. This was the first and only item that was thrown at it. Barton opened the book and looked at the pages.

Elaine and Eleanor looked at the book and made ugly faces at it, causing Dane and Barton to burst into laughter. Then, the girls joined in the laughter and slowly all four sat down and began to look at the girls’ source of anger.

Elaine and Eleanor pointed to the first page.

Place the correct operation which * represents in each of the following

(1) $8 * 4 = 2$

(2) $7 * 5 = 12$

(3) $6 * 4 = 24$

(4) $4 * 2 = 2$

Elaine began to explain their work to both Dane and Barton whilst Eleanor looked on.

“The operations are +, x, - and \div and so we need to choose one of them,” she said.

“In the first question, we first tried $8 + 4$ and got 12. Since the answer was 2 we knew that * did not represent +.”

“Good thinking,” replied Dane.

Next, we tried $8 - 4$ and got 4. Since the answer was 2 we knew that * did not represent -.”

“You were doing quite well,” commented Dane again.

“Next, we tried 8×4 and got 32. Since the answer was 2 we knew that * did not represent x. For \div was the only operation left, we placed \div as the answer,” said Elaine, with a proud look.

“Well,” commented Barton, “your logic is quite sound, but it would have been preferred if you confirmed the result by simply saying that $8 \div 4 = 2$, which is the result and so * meant \div in question (1).”

“You could have also used logic to reduce the amount of work you had done,” said Dane, as the two girls turned their attention to him.

“Explain,” they said together.

“If you look at the whole numbers 8 and 4,” began Dane, pointing to the numbers in the book, “you would see that the result is 2 and which is a smaller number than both 8 and 4. Therefore the operation should be either a division or a subtraction since these only, at least as far as the ones we have studied, would produce a smaller number.”

The girls thought for a while and seemed impressed.

“We could have simply tried $8 - 4 = 4$; then eliminate $-$ as the operation and afterwards tried $8 \div 4 = 2$, concluding that $*$ meant \div ,” they said.

“Precisely,” said the senior boy, as Barton patted him on the back.

“Based on what you have just suggested, maybe we could retry that type or reasoning with the remaining three questions,” suggested Eleanor.

“Certainly, why don’t you?” was the suggestion from both boys.

Eleanor took the book and read question (2).

(2) $7 * 5 = 12$

“The numbers used are 7 and 5,” she began. “Since the result is 12 and which is a larger number than $*$ is likely to be \times or $+$.”

“Excellent,” was Dane’s response to the girl’s thinking.

“Since we know that, $7 \times 5 = 35$, then $*$ does not represent the operation of \times . It must, therefore, represent $+$. But, according to you two, I shall confirm this by saying that $7 + 5 = 12$ and so $*$ represents $+$.”

“That was great,” replied Dane.

The girls smiled happily.

“Question (3),” said Eleanor with an excited tone in her voice.

“Please proceed,” replied Dane and Barton, enjoying the excitement that they just generated.

(3) $6 * 4 = 24$

“I notice that the operation on the numbers 6 and 4 produced a result larger than either of them. My mind concentrated on either + or x,” explained Eleanor. “I thought that $6 + 4 = 10$ and so + was not the correct operation. I confirmed that x was correct by saying $6 \times 4 = 24$, Hence * meant x in question (3).”

“I think you two girls are working these questions quite well,” said Barton.

“Not so fast,” said Elaine, grasping the arms of Dane and Barton. “don’t disappear on us like a ghost at cockcrow,” she laughed.

Barton and Dane burst into peals of laughter.

“My two gallant knights, it was the question (4) which ignited the spark of anger in Elaine,” said Eleanor, pointing to her friend.

“I had much reason to become angry,” defended Elaine. “I am right in what I thought and even Barton and Dane will have to agree with me because I know that I am correct,” said Elaine, placing her hands on her hips.

“State the question and explain its solution to us,” requested Barton. “Both Dane and I prefer that we judge for ourselves,” he said with a smile.

“I agree with Barton,” said Dane, as Elaine looked directly at him.

“Question (4) stated that $4 * 2 = 2$,” began Elaine. “Now my dear Dane, and kind Barton, the result of $4 - 2 = 2$ and I’m sure you realise that the result of $4 \div 2 = 2$. The operation of $*$ could mean both $-$ as well as \div . Hence, my three dear friends would any of you three care to debate my arithmetic?” asked Elaine.

“Isn’t a mathematics question supposed to have only one answer?” asked Elaine, for the two temporary dumbstruck boys.”

“Elaine,” said Barton, to the angry little girl, “you are quite correct.”

“I am,” she calmly replied to Barton, “I know that I am. Tell me something that I don’t know.”

“Did you check for answers at the back of the book?” asked Barton, flipping to the back pages, in search of an answer section.

“There are no answers given,” answered both Elaine and Eleanor.

“In fairness to all concerned, there are questions that can have more than one answer,” said Barton.

“Give us an example,” asked the two girls, sounding as though they had some doubts in their minds.

Barton thought for a moment, pulled out his notebook and pencil and began to write.

Elaine goes to the café and looks at the menu chart. It is listed with the following items:-

Sandwich  \$8

Drink  \$2

Dessert  \$6

Elaine has \$20 to spend at the café and wishes to use all of it. What can Elaine buy?

“Barton, I am afraid you have given me a rather elementary question,” said Elaine, a bit haughtily.

Barton looked at Elaine and smiled. Eleanor looked at both Elaine and Barton with a rather curious expression. Dane sat down and looked at the three others with a blank expression on his face.

“This is going to be interesting,” he muttered softly.

“I looked at the numbers 2, 6 and 8 and decided on how they can be arranged singly and in multiples to obtain a total of 20,” said a proud Elaine.

“I shall buy three desserts at \$6 each and one drink at \$2 and this will total $(3 \times \$6) + \$2 = \$18 + \$2 = \$20$. This should make you happy, Barton,” concluded Elaine.

“But Elaine,” interjected Eleanor, “wouldn’t you have been able to purchase two sandwiches at \$8 each and two drinks at \$2 each?”

Elaine immediately became red in the face with the realisation. She had quickly calculated along with Eleanor, the cost of two sandwiches and two drinks to be $(2 \times \$8) + (2 \times \$2) = \$16 + \$4 = \$20$. Now, she was at a temporary loss for words.

Then, Eleanor seized the opportunity to call even more options, much to the amusement of Barton and Dane.

“Perhaps one could buy ten drinks,” she added.

“But why would someone buy ten drinks?” fumbled Elaine, trying to defend the ‘one answer only, per question theory’.

“That is not the point,” argued Eleanor.

“What group or items is bought and how many of the same items are bought are unimportant,” confirmed Dane.

“Eleanor is quite correct. It is the exact amount of \$20 in total which is spent is our concern and is what the question requires.”

“Well,” said Elaine, after a moment, “I have no choice but to accept your explanation, though the choices may be absurd. Imagine buying ten drinks and nothing to eat.”

The two boys laughed but applauded her as she spoke, having realised that they were able to convince the young girl that some questions do have more than one correct answer.

“In this case, there are several correct answers,” agreed Elaine, sounding much more amicable and much less than the angry girl that the two boys first

encountered. She now wore a pretty smile upon her face as her friend hugged her.

I can list all the possible answers for this one question, she offered. It is easy to work with the prices of the three items.

“Why don’t you do that,” said the other three, as they crowded around Elaine as she wrote.

10 drinks at \$2 each will cost $\$2 \times 10 = \20 .

7 drinks at \$2 each and 1 dessert at \$6 will cost

$$(\$2 \times 7) + (\$6 \times 1) = \$14 + \$6 = \$20$$

3 drinks at \$2 each, 1 sandwich at \$8 and 1 dessert at \$6 will cost

$$(\$2 \times 3) + \$8 + \$6 = \$ (6 + 8 + 6) = \$20.$$

We shall all help you along, agreed the other three. Barton, Dane, and Eleanor sat and helped Elaine to list all the possible options.

In fact, when completed, even Barton and Dane were astonished at the number of possible combinations that were found.

“I am convinced that some questions do have several answers or at least more than one answer,” admitted Elaine.

“Barton and Dane, you shall be rewarded with a gift that few have ever experienced,” said Elaine. “It is a rare candy that was brought from over the seas and from a mysterious land.”

The two boys were first taken aback as Elaine’s performance was accompanied by a serious face. Barton eventually realised the humour and began to smile as she continued. Eleanor was already giggling.

“This candy was mixed with extracts from the ‘smart fruit’, blended with a ‘little generosity’ and ‘chocolate admiration’. It was then wrapped with ‘grateful paper’. Elaine handed the boys a candy each.



“This looks like an ordinary candy, which we all purchase from the cafeteria,” said Dane.

Elaine looked fiercely at him and her face looked as angry as when they had first met her.

“Upon closer observation, it is just as you described,” said Dane hurriedly. “It even tastes so much sweeter than the ordinary ones at the store,” Dane

confessed as he placed the candy in his mouth. “It is the best candy I have ever tasted.”

“I have something else to show you two,” said the still unsmiling Elaine.

The two boys looked, slightly amused, as Elaine held her Aunt's present close to her, and now smiling as she did so.

They stepped closer and peered into the book. They thought briefly of the fiery end that the book almost had, as daily, the janitors usually carted off the contents of the garbage bins into a huge incinerator for their final rites.

“Just look at this teaser on page seven of the book,” she said softly.

The boys looked at page seven as Elaine pointed to the middle of the page. The two boys read slowly whilst Elaine looked at them and then away to the heavens as she waited for a comment.

Place the appropriate operation to replace *, # and @, the question started.

Dane and Barton looked at the rest of it.

$$(14 * 8 @ 2) \# 5 = 4$$

“Tomorrow,” suggested the boys.

“If you are not here, I shall seek you out,” said Elaine, looking rather fierce.

Eleanor laughed as the two boys headed off in one direction and the two girls in another.

“Magic candy indeed,” groaned Dane, glancing over his shoulder at the departing Elaine.