

***2004 MSA MATHEMATICS SAMPLE ITEM***

***SARAH'S ELAPSED TIME***

***GRADE 4 BCR***

***3.C.1.c***

***PRACTICE SET***

## Grade 4

Sarah is walking to her friend's house. She leaves her house at 3:45 P.M. and arrives at her friend's house at 5:15 P.M.

### Step A

How long did it take Sarah to walk from her house to her friend's house?

---

### Step B

Use what you know about elapsed time to explain why your answer is correct. Use words and/or numbers in your explanation.

---

---

---

---

---

---

Grade 4

Sarah is walking to her friend's house. She leaves her house at 3:45 P.M. and arrives at her friend's house at 5:15 P.M.

Step A

How long did it take Sarah to walk from her house to her friend's house?

1 hour and 30 min.

Step B

Use what you know about elapsed time to explain why your answer is correct. Use words, numbers, and/or pictures in your explanation.

My answer is correct because  
I counted by 5's starting  
at 3:45 P.M. (after I counted  
the hour from 3:45 P.M. to 4:45 P.M.)  
until I get to 5:15 P.M..

Grade 4

Sarah is walking to her friend's house. She leaves her house at 3:45 P.M. and arrives at her friend's house at 5:15 P.M.

Step A

How long did it take Sarah to walk from her house to her friend's house?

1 hour and a half

Step B

Use what you know about elapsed time to explain why your answer is correct. Use words, numbers, and/or pictures in your explanation.

I know that my answer is correct because 3:45 to

4:15 is a half an hour and that 4:15 to 4:45 is an half

an hour and from 4:45 to 5:15 is an half an hour. So

I know that 2 half an hours make a hour. So now I

have 1 hour and one half an hour left. So it would be  
1 hour and a half

Sarah is walking to her friend's house. She leaves her house at 3:45 P.M. and arrives at her friend's house at 5:15 P.M.

Step A

How long did it take Sarah to walk from her house to her friend's house?

1:30

Step B

Use what you know about elapsed time to explain why your answer is correct. Use words, numbers, and/or pictures in your explanation.

I first lined up 5:15 and putted 3:45 under  
5:15. The I started to subtract. But I can't subtract  
45 from 15. So I brorrowed 60 minutes from 5 hours  
and subtract 45 from 60. Then I added 15 from  
the answer I got for the minutes. I'm done  
with the minutes and going on to the hour.  
Since the minutes borrowed 60 minutes = an hour.  
It turned into 4:15. I subtract 4-3 and  
got 1:30.

Grade 4

Sarah is walking to her friend's house. She leaves her house at 3:45 P.M. and arrives at her friend's house at 5:15 P.M.

Step A

How long did it take Sarah to walk from her house to her friend's house?

1 hour and 30min.

Step B

Use what you know about elapsed time to explain why your answer is correct. Use words, numbers, and/or pictures in your explanation.

My answer is correct because

I know elapsed time. I

took 3:45 and added 1

hour and got 4:45 and

added on until I got 5:15.

That's how I know my answer is correct.

Sarah is walking to her friend's house. She leaves her house at 3:45 P.M. and arrives at her friend's house at 5:15 P.M.

Step A

How long did it take Sarah to walk from her house to her friend's house?

1 hr. 30 min.

$$\begin{array}{r} 15 \\ + 15 \\ \hline 30 \end{array}$$

$$\begin{array}{r} 3:45 \xrightarrow{15 \text{ min.}} 4:00 \\ 4:00 \xrightarrow{1 \text{ hr.}} 5:00 \\ 5:00 \xrightarrow{15 \text{ min.}} 5:15 \end{array}$$

Step B

Use what you know about elapsed time to explain why your answer is correct. Use words, numbers, and/or pictures in your explanation.

I know my answer is correct because

from 3:45 it takes 15 min. to get to

4:00. From 4:00 it takes an hour to

get to 5:00, then from 5:00 to 5:15 it takes 15 min.

Add 15 and 15, and you get 30 min. plus an hour.

Sarah is walking to her friend's house. She leaves her house at 3:45 P.M. and arrives at her friend's house at 5:15 P.M.

Step A

How long did it take Sarah to walk from her house to her friend's house?

1 hour and 30 minutes to get to her friend's house

Step B

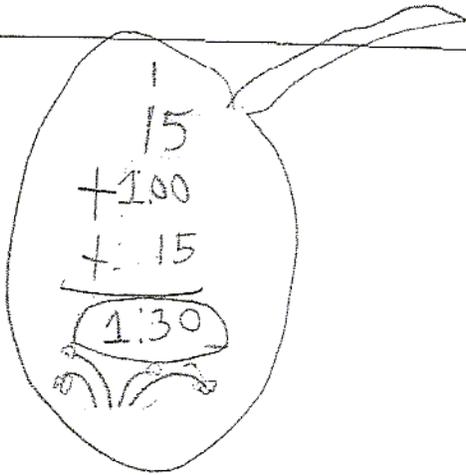
Use what you know about elapsed time to explain why your answer is correct. Use words, numbers, and/or pictures in your explanation.

Well 3:45 and 5:15. And 3:45 +

15 minutes is 4:00 + 1 hour is

5:00 + 15 more minutes it would be

5:15 and if you add it together.



Grade 4

Sarah is walking to her friend's house. She leaves her house at 3:45 P.M. and arrives at her friend's house at 5:15 P.M.

Step A

How long did it take Sarah to walk from her house to her friend's house?

2 hours and 35 minutes

Step B

Use what you know about elapsed time to explain why your answer is correct. Use words, numbers, and/or pictures in your explanation.

The way I know about elapsed time  
is you start at one time  
and they give you another time  
and they they ask how long it  
takes them to get there or when they get there.

## **Grade 4 – Sarah’s Elapsed Time – Practice Set Annotations**

### **PS1**

**Step A Score Level 1**

**Step B Score Level 1**

This response demonstrates a minimal understanding and analysis of the problem. The student uses a partial application of a strategy, "...I counted by 5's...until I got to 5:15 P.M." The explanation for the mathematical process is partially developed. The supportive information identifying the number of times the student counted by 5's is not provided.

Refer to Guide Paper G2.

### **PS2**

**Step A Score Level 1**

**Step B Score Level 2**

This response demonstrates a complete understanding and analysis of the problem. The student applies a reasonable strategy to solve the problem by counting by half-hours from the starting time to the finish time. The explanation for the mathematical process is clear and developed, "I know that 2 half an hours make a hour. So now I have 1 hour and one half an hour."

Refer to Guide Paper G6

### **PS3**

**Step A Score Level 1**

**Step B Score Level 2**

This response demonstrates a complete understanding and analysis of the problem. The student applies a reasonable strategy to solve the problem by subtracting starting time from the finishing time. The explanation for the mathematical process is clear and developed, "I borrowed 60 minutes from 5 hours an subtract 45 from 60. Then I added 15 from [to] the answer I got for the minutes." The supportive numeric information provided is accurate and appropriate.

## **PS4**

### **Step A Score Level 1**

### **Step B Score Level 1**

This response demonstrates a minimal understanding and analysis of the problem. The student uses a partial application of a strategy, adding time, to solve this problem. The supportive information explaining what is added to 4:45 and how many times it is added is not provided, "...4:45 and added on until I got to 5:15." Refer to Guide Paper G3

## **PS5**

### **Step A Score Level 1**

### **Step B Score Level 2**

This response demonstrates a complete understanding and analysis of the problem. The student applies a reasonable strategy to solve the problem by adding a group of 15 minutes to get to 4:00 and then adding groups of 15 minutes to get to the final time. The explanation for the mathematical process is clear and developed, "From 4:00 it takes an hour to get to 5:00, then from 5:00 to 5:15 it takes 15 minutes." The supportive information provided is appropriate to the solution of the problem, "Add 15 and 15, and you get 30 minutes, plus an hour." Refer to Guide Paper G6

## **PS6**

### **Step A Score Level 1**

### **Step B Score Level 2**

This response demonstrates a complete understanding and analysis of the problem. The student applies a reasonable strategy to the solution of the problem by adding groups of 15 minutes. The explanation provided is clear and developed. The supportive numerical information provided shows how the final answer was reached. Refer to Guide Paper G6.

## **PS7**

### **Step A Score Level 0**

### **Step B Score Level 0**

This response is irrelevant to the problem. The student merely gives a definition of elapsed time including a restatement of the question. Refer to Guide Paper G1.