Name _____

Running Frenzy

At Marathonia Middle School, running has become a real craze! Students are running for health and for fun. The staff at the school decided to organize a running fundraiser.

Here's the plan:

Students are asked to go out and collect pledges based upon their running for the month. They receive $1.00 from each sponsor for each ½ mile they run in the first week of October.

Here's what some students managed to do in the first week of October:

Maggie
Got 8 sponsors

Running Log for the Week	
Monday	2 ½ miles
Tuesday	1 ½ miles
Wednesday	0 miles
Thursday	3 miles
Friday	2 miles
Saturday	0 miles
Sunday	3 ½ miles

Jared
Got 6 sponsors

Running Log for the Week	
Monday	3 miles
Tuesday	1 ½ miles
Wednesday	2 miles
Thursday	0 miles
Friday	3 miles
Saturday	1 mile
Sunday	3 miles

Eloise
Got 12 sponsors

Running Log for the Week	
Monday	4 miles
Tuesday	2 miles
Wednesday	1 mile
Thursday	0 miles
Friday	3 ½ miles
Saturday	0 miles
Sunday	4 miles

Johan
Got 11 sponsors

Running Log for the Week	
Monday	1 mile
Tuesday	2 miles
Wednesday	2 miles
Thursday	1 mile
Friday	2 miles
Saturday	1 mile
Sunday	2 miles

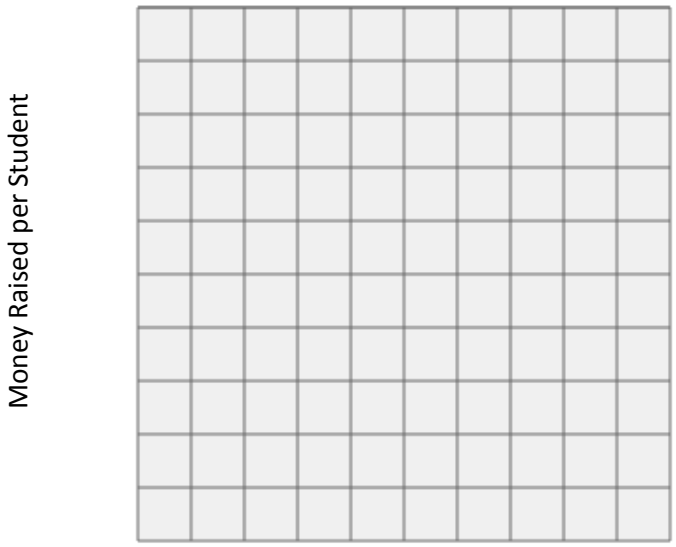
1. We want to figure out how much money each student raised. Describe the strategy you plan on using. _____
_____
_____
_____

2. How much money did each student raise? Show your steps to support your work.

Student	**Miles Run**	**# of Sponsors**	**Money Raised per Mile**	**Money Raised**
Maggie				
Jared				
Eloise				
Johan				

3. Did each student raise the same amount of money for each ½ mile he/she ran? If not, explain why? _____
_____
_____

4. Plot and graph the miles run and the money raised for each student. Why was this graph not linear? _____
_____
_____



5. Let's make some unit rate statements based upon this graph:

    a. Maggie raised $_____ per mile.
    b. Jared raised $_____ per mile.
    c. Eloise raised $_____ per mile.
    d. Johan raised $_____ per mile.

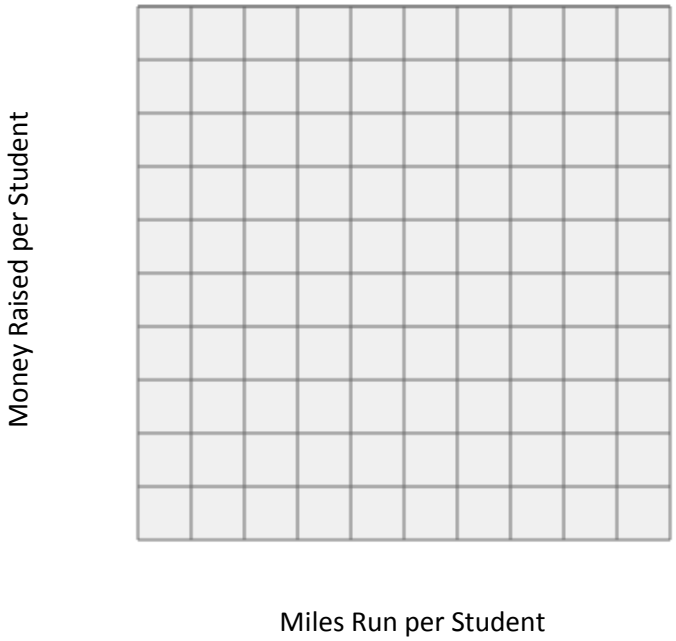
6. CHALLENGE (Show how you figured this out. Round to the nearest hundredth's place if needed.)

    a. Maggie ran _____ miles per dollar.
    b. Jared ran _____ miles per dollar.
    c. Eloise ran _____ miles per dollar.
    d. Johan ran _____ miles per dollar.

7. Imagine the situation was changed and it was no longer based upon number of sponsors. Instead the local gym is trying to encourage fitness for youth and does a group sponsorship. The gym says that they will donate $4 for each ½ mile that students run. There will be no individual sponsors. Complete the following table based upon this new sponsorship.

Student	**Miles Run**	**Money Raised per Mile**	**Money Raised**
Maggie			
Jared			
Eloise			
Johan			

8. Plot and graph the miles run and the money raised for each student. What do you notice about this graph? _____
_____
_____



9. Does this graph pass through the origin (0,0)? Why? _____
_____

10. Let's make some unit rate statements based upon this graph:

    a. Maggie raised $_____ per mile.
    b. Jared raised $_____ per mile.
    c. Eloise raised $_____ per mile.
    d. Johan raised $_____ per mile.

11. CHALLENGE (Show how you figured this out. Round to the nearest hundredth's place if needed.)

    Each student ran _____ mile per dollar.

12. Why was the data from the gym sponsorship easier to interpret than when we had individual sponsors? _____

_____

_____

_____

13. In what situation would it be more profitable for the school to have individual sponsors? _____

_____

_____

_____

14. In what situation would it be more profitable for the school to have the gym sponsorship? _____

_____

_____

_____

Running Frenzy

ANSWER KEY

At Marathonia Middle School, running has become a real craze! Students are running for health and for fun. The staff at the school decided to organize a running fundraiser.

Here's the plan:

Students are asked to go out and collect pledges based upon their running for the month. They receive $1.00 from each sponsor for each ½ mile they run in the first week of October.

Here's what some students managed to do in the first week of October:

Maggie
Got 8 sponsors

Running Log for the Week	
Monday	2 ½ miles
Tuesday	1 ½ miles
Wednesday	0 miles
Thursday	3 miles
Friday	2 miles
Saturday	0 miles
Sunday	3 ½ miles

Jared
Got 6 sponsors

Running Log for the Week	
Monday	3 miles
Tuesday	1 ½ miles
Wednesday	2 miles
Thursday	0 miles
Friday	3 miles
Saturday	1 mile
Sunday	3 miles

Eloise
Got 12 sponsors

Running Log for the Week	
Monday	4 miles
Tuesday	2 miles
Wednesday	1 mile
Thursday	0 miles
Friday	3 ½ miles
Saturday	0 miles
Sunday	4 miles

Johan
Got 11 sponsors

Running Log for the Week	
Monday	1 mile
Tuesday	2 miles
Wednesday	2 miles
Thursday	1 mile
Friday	2 miles
Saturday	1 mile
Sunday	2 miles

1. We want to figure out how much money each student raised. Describe the strategy you plan on using. Answers vary.

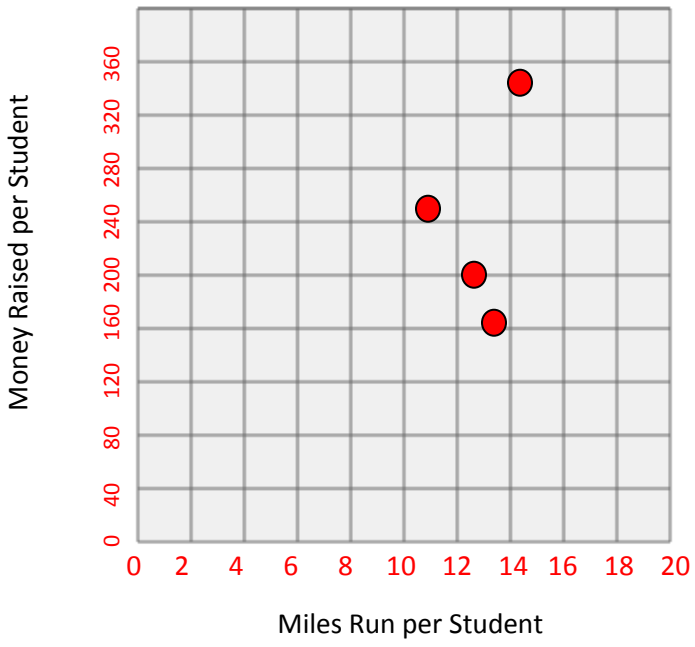
2. How much money did each student raise? Show your steps to support your work.

Student	**Miles Run**	**# of Sponsors**	**Money Raised per Mile**	**Money Raised**
Maggie	12.5	8	2 x 8 = $16	12.5 x 16 = $200
Jared	13.5	6	2 x 6 = $12	13.5 x 12 = $162
Eloise	14.5	12	2 x 12 = $24	14.5 x 24 = $348
Johan	11	11	2 x 11 = $22	11 x 22 = $242

Student work will vary. The steps in the table above may resemble that done by the students.

3. Did each student raise the same amount of money for each ½ mile he/she ran? If not, explain why? No, each student did not raise the same amount per half mile. It depended on how many sponsors the student had. Each student raised $1 times the # of sponsors per ½ mile.

4. Plot and graph the miles run and the money raised for each student. Why was this graph not linear? This graph was not linear since the amount each student earned per half mile varied (due to the number of sponsors).



5. Let's make some unit rate statements based upon this graph:

    a. Maggie raised $16 per mile.
    b. Jared raised $12 per mile.
    c. Eloise raised $24 per mile.
    d. Johan raised $22 per mile.

6. CHALLENGE (Show how you figured this out. Round to the nearest hundredth's place if needed.)

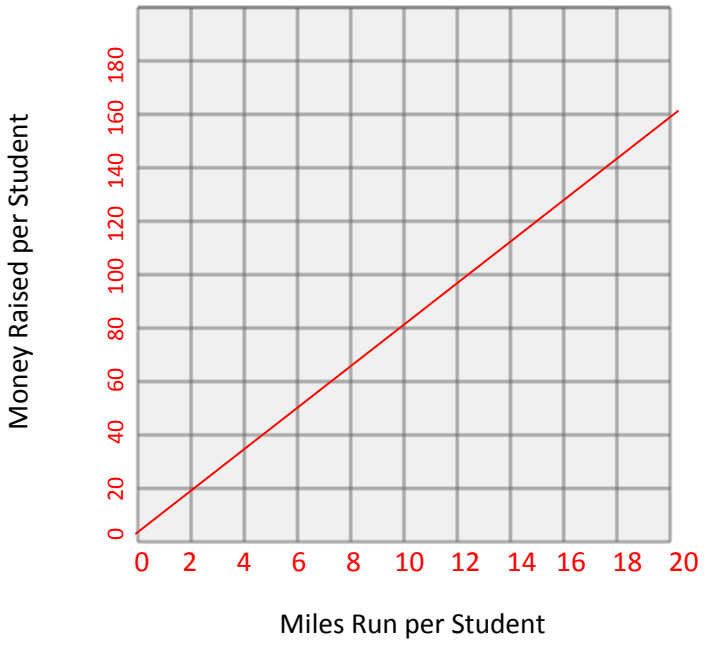
    a. Maggie ran ≈0.06 miles per dollar.
    b. Jared ran ≈0.08 miles per dollar.
    c. Eloise ran ≈0.04 miles per dollar.
    d. Johan ran ≈0.05 miles per dollar.

    Student work will vary. Some will notice the use of reciprocals and thus can just divide.

7. Imagine the situation was changed and it was no longer based upon number of sponsors. Instead the local gym is trying to encourage fitness for youth and does a group sponsorship. The gym says that they will donate $4 for each ½ mile that students run. There will be no individual sponsors. Complete the following table based upon this new sponsorship.

Student	**Miles Run**	**Money Raised per Mile**	**Money Raised**
Maggie	12.5	$8	$100
Jared	13.5	$8	$108
Eloise	14.5	$8	$116
Johan	11	$8	$88

8. Plot and graph the miles run and the money raised for each student. What do you notice about this graph? Answers vary. Students may notice that the graph is linear.



9. Does this graph pass through the origin (0,0)? Why? Yes, this graph passes through the origin because when a student runs 0 miles, he/she raises $0.

10. Let's make some unit rate statements based upon this graph:

    a. Maggie raised $8 per mile.
    b. Jared raised $8 per mile.
    c. Eloise raised $8 per mile.
    d. Johan raised $8 per mile.

11. CHALLENGE (Show how you figured this out. Round to the nearest hundredth's place if needed.)

    Each student ran ≈0.13 mile per dollar.

12. Was the data from the gym sponsorship easier to interpret than when we had individual sponsors? Answers vary. Students may mention that it was easier

since every student made the same amount of money per mile. It was not dependent on the sponsorship.

13. In what situation would it be more profitable for the school to have individual sponsors? It would be more profitable to have individual sponsors if each child can get more than 4 sponsors or if the average amount of sponsors per student is greater than 4.

14. In what situation would it be more profitable for the school to have the gym sponsorship? It would be more profitable to have the gym sponsorship if each child cannot get at least 4 sponsors or if the average amount of sponsors is less than 4.