March 21, 2011

Welcome Spring!

Class starts in

Please be ready.

Today's Agenda ~
MCA ??'s
Check Grades
Continue 8.2.1
Begin 8.2.2

Go ahead and log in to your computer now.

Homework: p. 402 (4)

MCA ??'s

(5)

# of Books	Frequency
0	2
1	5
2	4
3	3
4	0
5	1

(12)

25
− 5
20 pounds more

(11)

Leg band
Total

$\frac{54}{?} = \frac{13}{70}$

$70 \cdot 54 = 291$

$\frac{}{13}$

about 300

T + D

① Same — upward / (0,0)

Diff — distance / slopes

② faster

slower

Develop & Understand: B

Many joggers try to jog at a steady pace throughout most of their runs. This is particularly important for long-distance running.

- Terry tries to jog at a steady pace of 4 meters per second.
- Maria tries to jog at a steady pace of 3 meters per second.
- Bronwyn does not know how fast she jogs, but she tries to keep a steady pace.

8. Make tables for Terry and Maria to show the distances they travel, d meters, in various times, t seconds.

Terry

Time (seconds), t	0	5	10	15	20
Distance (meters), d	0	20	40	60	80

Maria

Time (seconds), t	0	5	10	15	20
Distance (meters), d	0	15	30	45	60

Real-World Link

The maximum speed a human being has ever run is about 27 miles per hour. The fastest animal on Earth, the cheetah, has been clocked at about 60 miles per hour.

Homework is on pages 402 - 409

9. Write rules that show how distance d changes with time t for Terry and for Maria.

Terry: $d = 4t$

Maria: $d = 3 \cdot t$

10. A timekeeper measured times and distances traveled for Bronwyn and put the results in a table.

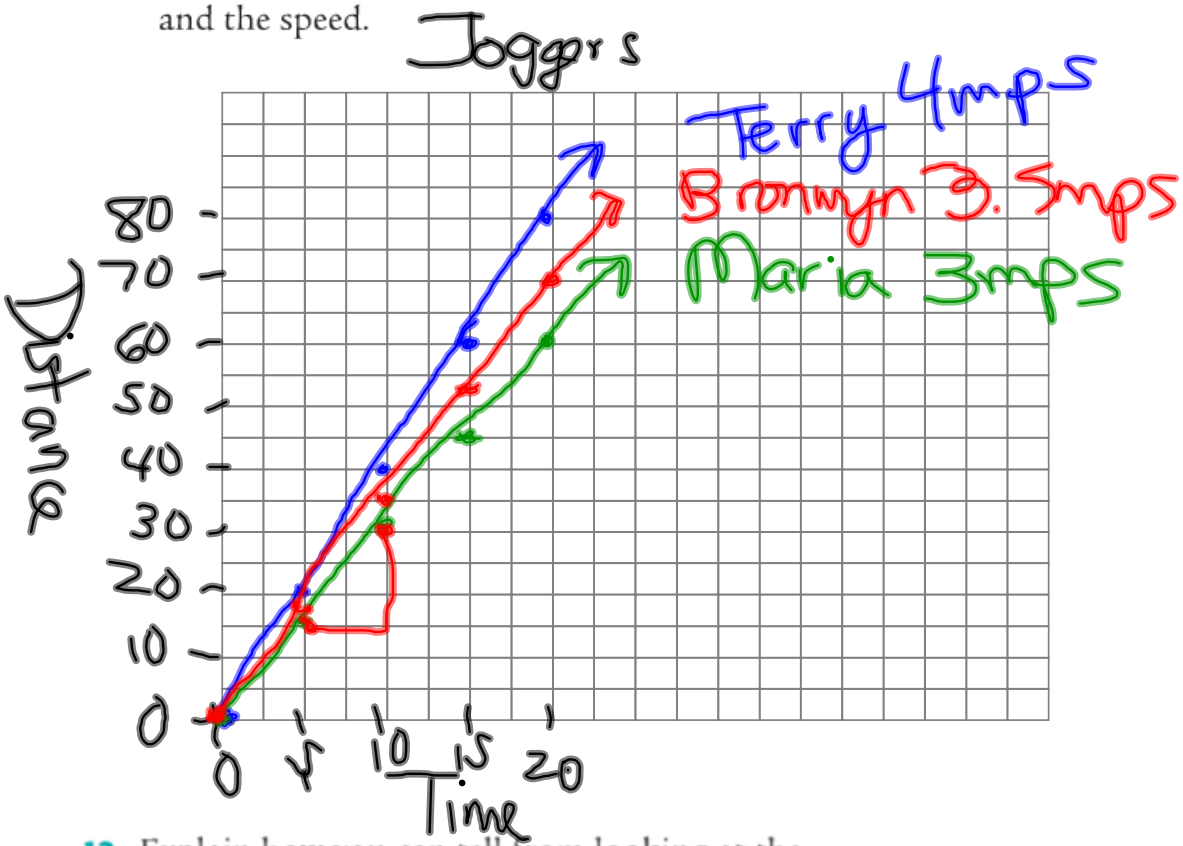
Time (seconds), t	0	5	10	15	20
Distance (meters), d	0	17.5	35	52.5	70

How fast does Bronwyn jog? Write a rule that relates Bronwyn's distance to time.

$\frac{35}{10} = 3.5 \text{ mps}$

$d = 3.5t$

11. On one grid, draw graphs for Terry, Maria, and Bronwyn. Put time on the horizontal axis. Label each graph with the name of the person and the speed.



12. Explain how you can tell from looking at the graph who jogs most quickly and who jogs most slowly.

Terry fast

Maria slow

All the points on each graph you drew are on a line through the point (0, 0). The steepest line is the one for which distance changes the most in a given amount of time, that is, when the speed is the fastest. The line that is the least steep is the one for which distance changes the least in a given amount of time, that is, when the speed is the slowest.

Homework is on pages 402 - 409

Slope describes the steepness of a line. In this case, the slope tells how much the distance changes per unit of time. More generally, the **slope** of a line tells how much the y variable changes per unit change in the x variable.

Sometimes slope is described as *rise* divided by *run*. This makes sense because y changes in the vertical direction, or "rises," and x changes in the horizontal direction, or "runs."

Homework is on pag

Slope

Definition	Picture
The ratio of rise to run which describes the steepness of a line.	rise / run
Reminds me of	Sentence

Example

This graph shows how Terry's distance changed over time. To find the slope, choose two points, such as (10, 40) and (20, 80). From the left point to the right point, the y value changes from 40 to 80. The *rise* between these points is $80 - 40$, or 40. The x value changes from 10 to 20, so the *run* between these points is $20 - 10$, or 10. The slope, the rise divided by the run, is $\frac{40}{10}$, or 4.