## Bowling

Everyone is thankful for the electronic scoring at the bowling alley. We see our score come on the screen above us, but many of us don't know how it is determined. Hopefully the following exercises will clear up this mystery.
The score board for a bowling game has ten frames. During each frame, the player gets two tries to knock down all of the ten pins. The number knocked down is recorded:

| 5 | 4 |
| :---: | :---: |
| 9 |  |

In this frame, the player knocked down 5 pins with the first ball and 4 pins with the second. His score for this frame is therefore 9 , the sum of 5 and 4.

You also should note that the score of a single frame is dependent upon the score of the frame before it. For example, the score in the second frame below is 13 because you must add the 5 pins from the first frame to the 8 from the second.

| 3 | 2 | 7 | 1 |
| :---: | :---: | :---: | :---: |
| 5 | 13 |  |  |

Now comes the tricky part:

Note how a strike
 score board.


A strike is when a player knocks down all ten pins on the first ball of a frame. The score for this frame is 10 plus the number of pins scored by the next two balls. In the following example, the score of frame 1 is $18(10+3+5)$, and the score for frame 2 is 26 (18+3+5):

| 1 | 2 |
| :---: | :---: |
| X | 35 |
| 18 | 26 |

A spare is when a player knocks down all ten pins using two balls. The score for this frame is 10 plus the number of pins scored by the first ball of the next frame.In the following example, the score of frame 1 is $14(10+4)$, and the score for frame 2 is 20 (14+4+2):

| 1 |  | 2 |  |
| :---: | :---: | :---: | :---: |
| 6 | 7 | 4 | 2 |
| 14 | 20 |  |  |

Now try some on your own:
What are the scores of the seventh frame of Exercise $A$ and the eighth frame of Exercise $B$ ?

| 6 |  | 7 |  |
| :--- | :--- | :--- | :--- |
| 7 | 7 | 4 | 5 |
| 102 |  |  |  |

Exercise A:

- A-111
- B-115
- C-107

Exercise B:


- A-149
- B-140
- C-141


## Bowing Math Work Sheet \#1

Name
Directions: Now that you know the basics about keeping score in bowling, figure the frame-byframe scores for the three players below. Write the score each player has at the end of each frame.
Online Resource: Bowling Math hitp.j/richmond.edu/academics/a\&s/education/projects/webunits/math/bow/ing.html


Which player was the winner of this game? $\qquad$
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## Bowring Math Worlc Sheet \#2

Name
Directions: Now that you know the basics about keeping score in bowling, figure the frame-byframe scores for the three players below. Write the score each player has at the end of each frame.
Online Resource: Bowling Math hitp://richmond.edu/academics/a\&s/education/projects/webunits/math/bowling.html

| Name | 1 | 2 |  | 3 |  | 4 |  |  |  |  |  |  |  |  |  |  |  | 10 |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Kyle | $\times$ | 0 | 1 | 1 | 3 | 1 | 8 | 2 | 6 | 2 | 5 | 3 | 2 | 2 | 4 | 8 | 1 | 1 | 2 |  |
| Score |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |


| Name | 1 | 2 |  | 3 |  | 4 |  | 5 |  | 6 |  | 7 |  | 8 |  | 9 |  | 10 |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Tanya | $\times$ | 9 | / | 6 | 1 | 1 | 5 | 4 | 1 | 3 | 1 | 6 | 2 | 3 | / | 5 | 4 | 5 | 3 |  |
| Score |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |


| Name | 1 |  | 2 |  | 3 |  | 4 |  | 5 |  | 6 |  | 7 | 8 |  | 9 |  | 10 |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Josh | 2 | 5 | 6 | 0 | 4 | 5 | 0 | 7 | 9 | 1 | 9 | 0 | $\times$ | 1 | 1 | 5 | 3 | 2 | 4 |  |
| Score |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |

Which player was the winner of this game?
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