Whiteboard Problem 1.2 Solution

EXAMPLE 1.6 IN BOOK

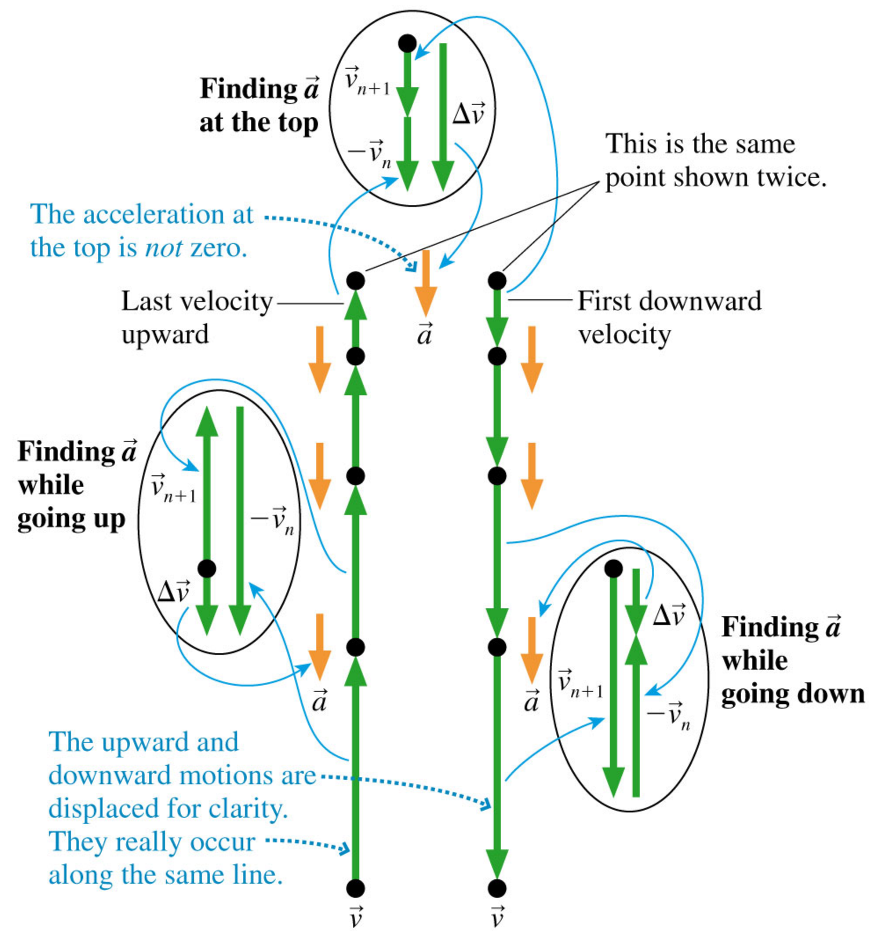
A ball is tossed straight up in the air. At its very highest point, the ball's acceleration vector $\vec{a}$

A. Points up.

B. Is zero.

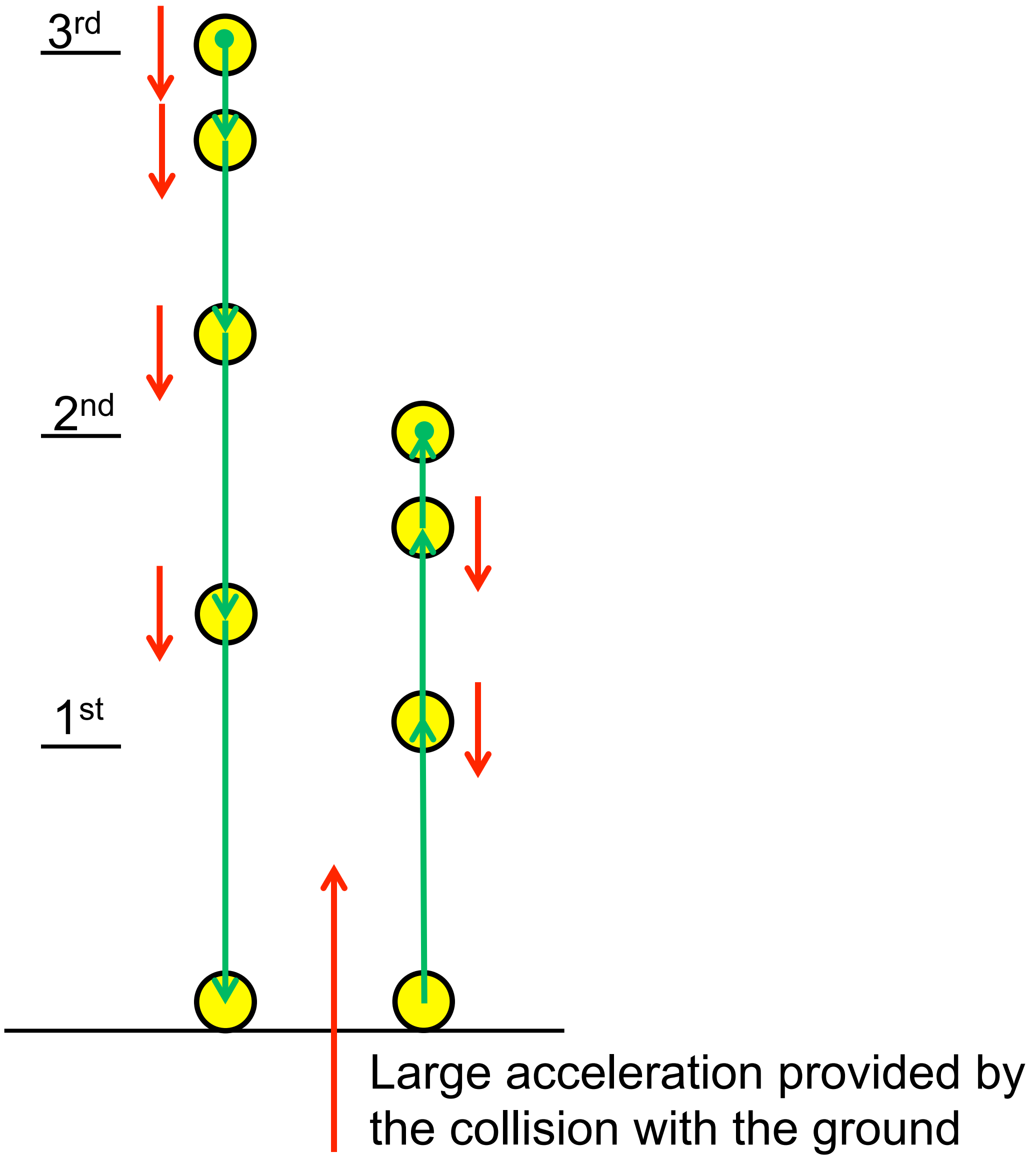
✔ **C. Points down.**

In fact, the acceleration vector points down as the ball rises, at the highest point, and as it falls.

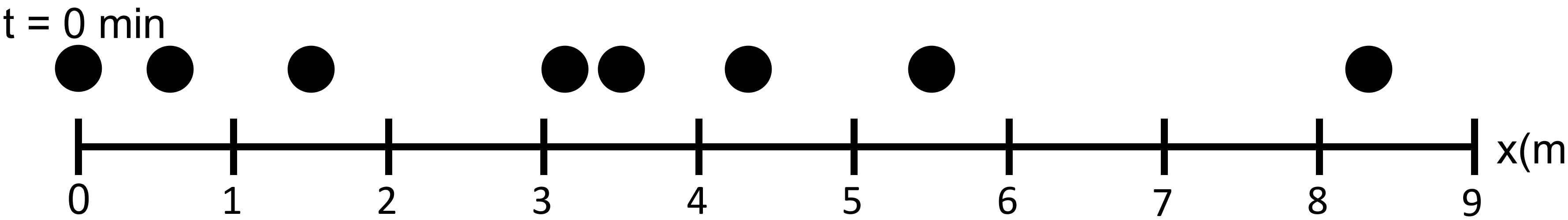


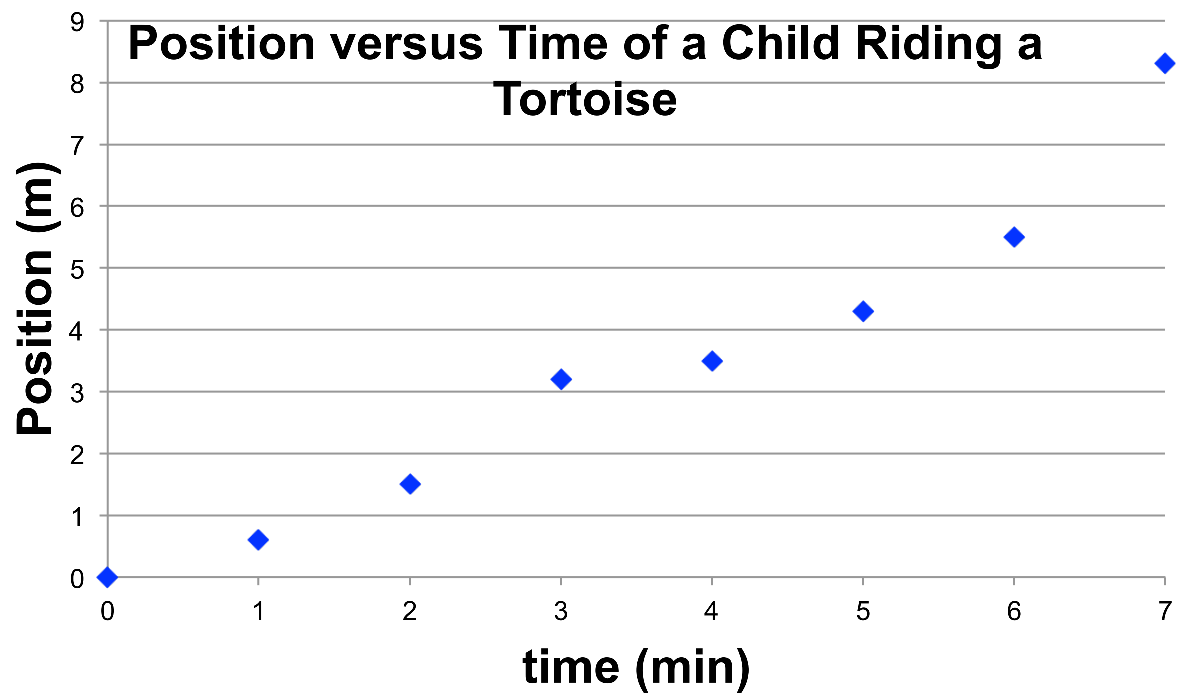
Whiteboard Problem 1.3 Solution

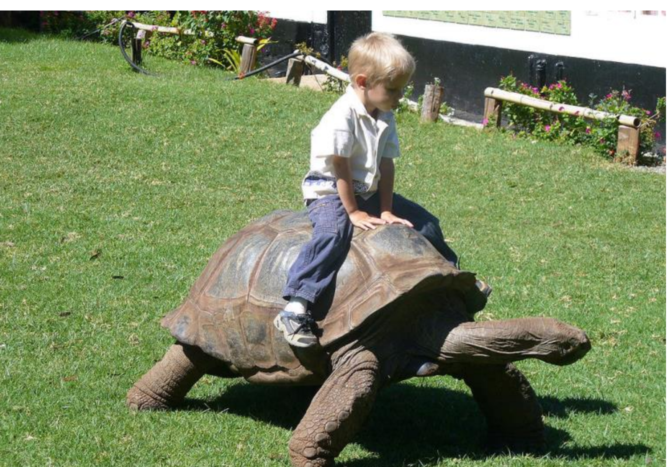
PROBLEM 17
CHAPTER 1



Whiteboard Problem 1.4 Solution



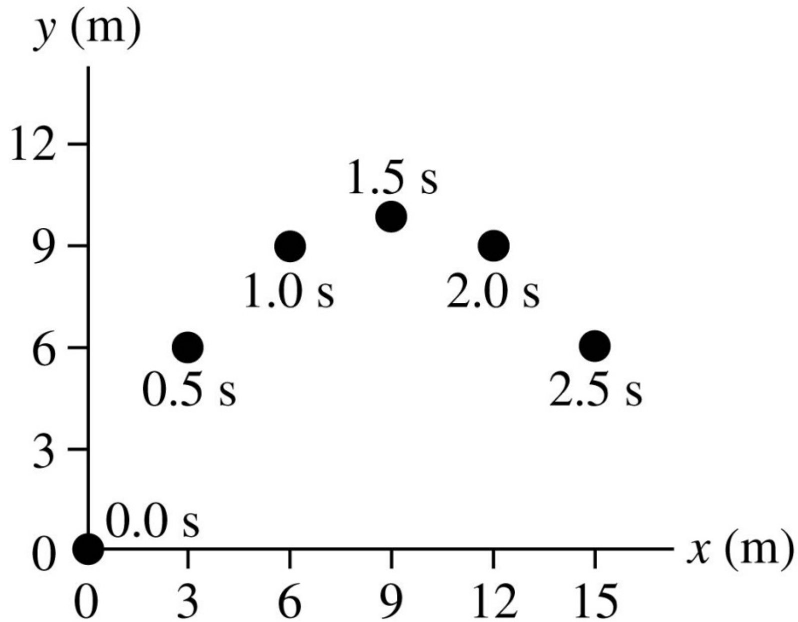




http://commons.wikimedia.org/wiki/File:Child_riding_tortoise.jpg

NOTE: Steeper is Faster!

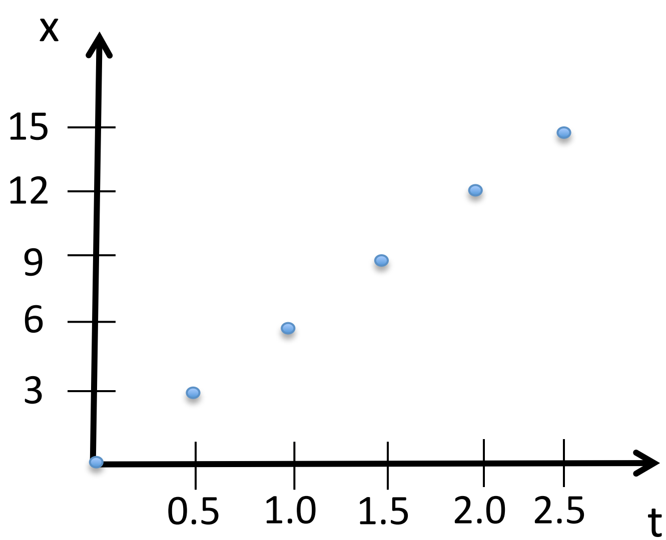
Whiteboard Problem 1.5 Solution



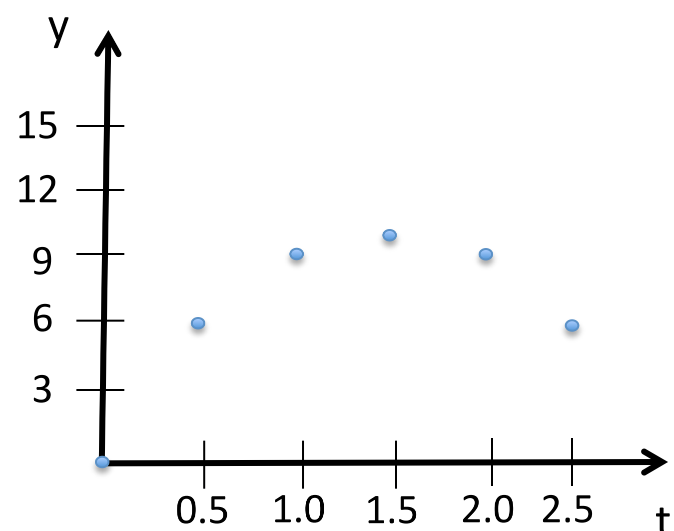
Shown is the motion diagram of a basketball, with 0.5 s intervals between frames.

One table will be collected for grading!

x-motion vs. t



y-motion vs. t



Whiteboard Problem 1.6 Solution

Compute the following numbers using the significant figures rules:

A) 33.3 * 25.40 = 846. or 8.46×10^2

B) 33.34 – 25.4 = 7.9

C) $\sqrt{33.3}$ = 5.77

D) 333.3/25.4 = 13.1

Operators	÷ × √	+ -
# of significant figures	Lowest # of significant figures	Smallest # of decimal places
Example	4.3/1.456 = 3.0	1.2 + 5.96 = 7.2

Whiteboard Problem 1.7 solutions

Convert the following to SI units:

A) $8 \text{ in} =$

$$(8 \text{ in})\left(\frac{2.54 \text{ cm}}{1 \text{ in}}\right)\left(\frac{1 \text{ m}}{100 \text{ cm}}\right) = .2 \text{ m}$$

B) $66 \text{ ft/s} =$

$$\left(66\frac{\text{ft}}{\text{s}}\right)\left(\frac{12 \text{ in}}{1\text{ft}}\right)\left(\frac{2.54 \text{ cm}}{1 \text{ in}}\right)\left(\frac{1 \text{ m}}{100 \text{ cm}}\right) = 20.\frac{\text{m}}{\text{s}}$$

C) $60 \text{ mph} =$

$$\left(\frac{60 \text{ miles}}{1 \text{ hr}}\right)\left(\frac{5280 \text{ feet}}{1 \text{ mi}}\right)\left(\frac{12 \text{ in}}{1 \text{ ft}}\right)\left(\frac{2.54 \text{ cm}}{1 \text{ in}}\right)\left(\frac{1 \text{ m}}{100 \text{ cm}}\right)\left(\frac{1 \text{ hr}}{3600 \text{ s}}\right) = 30\frac{\text{m}}{\text{s}}$$

D) $14 \text{ in}^2 =$

$$(14 \text{ in}^2)\left(\frac{2.54 \text{ cm}}{1 \text{ in}}\right)\left(\frac{2.54 \text{ cm}}{1 \text{ in}}\right)\left(\frac{1 \text{ m}}{100 \text{ cm}}\right)\left(\frac{1 \text{ m}}{100 \text{ cm}}\right) = 9.0 * 10^{-3} \text{ m}^2$$