Word Problems (Multi-step)

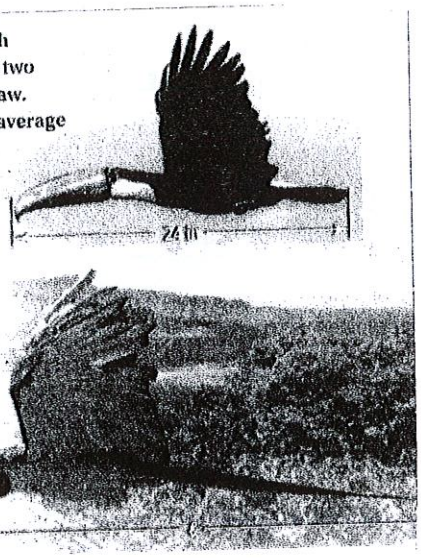
1) Kn
Tou

Blue

3/2

2) Kno
• 18 to
cons
• 1/2 sl
• need
title

1) **Biology** Toucans and blue-and-yellow macaws are both tropical birds. The length of an average toucan is about two thirds of the length of an average blue-and-yellow macaw. Toucans are about 24 in. long. What is the length of an average blue-and-yellow macaw?



2) **Community Service** You are making a bulletin board to advertise community service opportunities in your town. You plan to use half a sheet of construction paper for each ad. You need 5 sheets of construction paper for a title banner. You have 18 sheets of construction paper. How many ads can you make?

3) **Concert Merchandise** Martha takes her niece and nephew to a concert. She buys T-shirts and bumper stickers for them. The bumper stickers cost $1 each. Martha's niece wants 1 shirt and 4 bumper stickers, and her nephew wants 2 shirts but no bumper stickers. If Martha's total is $67, what is the cost of one shirt?

4) **Graphic Design** It takes a graphic designer 1.5 h to make one page of a Web site. Using new software, the designer could complete each page in 1.25 h, but it takes 8 h to learn the software. How many Web pages would the designer have to make in order to save time using the new software?

2.

W

1) **Know**
Toucan: $\frac{2}{3}m = 24$
Blue + yellow macaw: m

Need
How big is the macaw?

$\frac{2}{3}m = 24$

$\frac{3}{2} \cdot \frac{2}{3}m = 24 \cdot \frac{3}{2}$

$m = \frac{24}{1} \rightarrow \frac{3}{2} = \frac{72}{2} =$ **36 inches**

2) **Know**
- 18 total sheets of construction paper
- 1/2 sheet each ad
- Need 5 sheets for title banner

Need
How many ads can you make?

Have: 18 = Use: $\frac{1}{2}x + 5$

$-5 \qquad -5$

$2 \cdot 13 = \frac{1}{2}x \cdot 2$

$26 = x$ **26 ads**

3) **Know**
Bumper stickers $1
Niece: 1 shirt 4 stickers
Nephew: 2 shirts
Total cost: $67

Need
cost of one shirt

t = t-shirts b = stickers

$3t + 4b = 67$
$3t + 4(1) = 67$
$3t + 4 = 67$
$-4 \quad -4$
$\frac{3t}{3} = \frac{63}{3}$
$t = \$21$

4) **Know**
Old software: 1.5h per page
New software: 1.25h per page and 8h to learn

Need
How many made in order to save time?

Old Software = New software
$1.5p = 1.25p + 8$
$-1.25p \quad -1.25p$
$\frac{.25p}{.25} = \frac{8}{.25}$
$p = 32$

33 pages or more would save time.