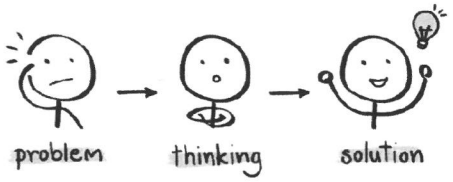
Strengthen your Problem Solving Skills



1) Molly and Jason were selling brownies for a cake sale. After Molly sold $\frac{5}{7}$ of her brownies, she had $\frac{2}{3}$ as many as Jason. Jason then sold 40 brownies, and had a quarter as many brownies as Molly. How many brownies did each of them have at first?

At the end:

M ▭▭▭▭ (2/3 of Jason before he sold 40)

J ▭

⇓ (4 parts = 2/3, so Jason had 6 parts before)

Before:

M ▭▭▭▭ (2/7)

J ▭▭▭▭▭▭ ← 40 →

40 ÷ 5 = 8 per part

M: 4 × 8 = 32 → = 2/7

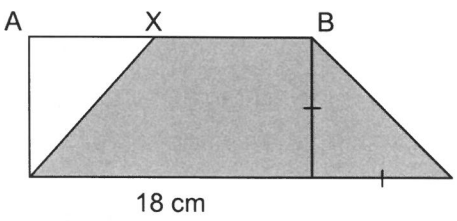
J: 6 × 8 = 48

1/7 = 16

16 × 7 = 112

Molly: 112 Jason: 48

2) The figure shows a rectangle and a triangle (right) joined together. The rectangle's length is double its width. The ratio of AX : XB is 4 : 5. Find the difference between the shaded and unshaded areas of the whole figure.



Triangle: 9 × 9 × ½ = 40.5 cm² Rectangle: 9 × 18 = 162 cm²

AX : XB = 4 : 5 (9 parts total)

18 ÷ 9 = 2 cm per part

AX = 4 × 2 = 8 cm

Unshaded triangle: 8 × 9 × ½ = 36 cm²

Shaded part of rectangle: 162 − 36 = 126 cm²

→ Difference: 126 + 40.5 − 36 = 130.5 cm²

130.5 cm²

3) Jenny spent $\frac{1}{3}$ of her money on a handbag and $\frac{3}{4}$ of the remainder on jewellery ($4510 for a gold ring and $890 for a pearl necklace). She then saved the rest. How much more did she spend than save?

4510 + 890 = $5400 (3/4 remaining)

1/4 = $1800 (saved)

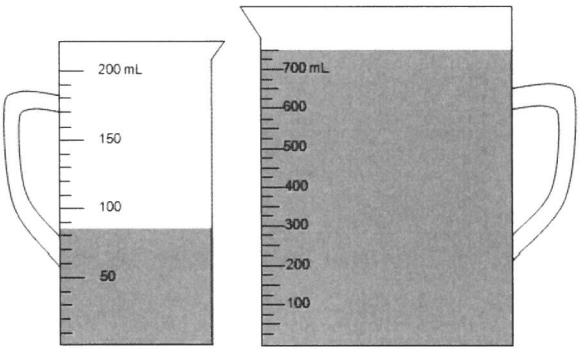
1800 × 4 = $7200 (2/3 left after spending on handbag)

1/3 = $3600 (handbag)

3600 + 5400 − 1800 = $7200

$7200

4) Peter wants to make a cordial drink, which requires 6 mL of water for each mL of cordial concentrate. He measures cordial concentrate using jug 1, and water using jug 2. He uses all of the liquids from these 2 jugs. How much more cordial concentrate does he need?



85mL 750mL

750÷6 = 125mL of cordial concentrate required

125 - 85 = 40mL

40mL

5 pencils = 3 pens 2 erasers = 1 pen

5) 15 pencils cost the same as 9 pens. An eraser costs half as much as a pen. The total cost of 1 pencil, 1 pen and 1 eraser is $3.15.

a) Use the cost of 2 pencils, 2 pens and 2 erasers to find the cost of 1 pencil.

2 pencils + 2pens + 2erasers = $6.30

= 1 pen

2 pencils + 3 pens = $6.30

= 5 pencils

7 pencils = $6.30

1 pencil = $0.90

$0.90

b) What is the total cost of 4 pencils, 2 pens and 5 erasers?

5 pencils = $4.50 = 3 pens

1 pen = $1.50

1 eraser = $0.75

4 x $0.90 + 2 x $1.50 + 5 x $0.75

= $10.35

$10.35