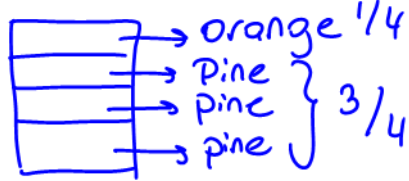## A. MULTIPLE CHOICE:

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1. What is the value of the expression:

$$\frac{5(-18 + 12)}{-4 + 1}$$

a) 10
b) 6
c) -6
d) -10

$$= \frac{5(-6)}{-3}$$

$$= \frac{-30}{-3}$$

$$= 10$$

---

2. Frodo is making fruit punch by mixing orange juice and pineapple juice in a ratio of 1:3.

How much pineapple juice should he use to make 3L of fruit punch?

a) 0.75 L
b) 2 L
c) 2.25 L
d) 4 L

orange ¼
Pine
pine } ¾
pine

Pineapple makes up of ¾ of 3L.

$$3 \cdot \frac{3}{4} = \frac{9}{4}$$
$$= 2.25$$

---

3. A cell phone company offers four choices for purchasing talk time.

Which of the following has the lowest cost per minute?

a) 200 minutes for $22.50 $22.50 \div 200 = 0.1225$
b) 550 minutes for $68.00 $68 \div 550 = 0.1236$
c) 700 minutes for $80.25 $80.25 \div 700 = 0.1146$
d) 850 minutes for $99.50 $99.50 \div 850 = 0.1171$

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4. A basketball player scores 28 points in a game. The player scores 35% of the total team points.

How many points does the player's team score in total?

a) 63
b) 65
c) 72
d) 80

$$\frac{28}{total} = \frac{35 \div 5}{100 \div 5} \quad \Big\} \text{ Reduce}$$

$$\frac{28}{x} = \frac{7}{20} \quad \text{cross multiply}$$

$$7x = 560$$
$$\overset{\div 7}{7x} = 560 \overset{\div 7}{}$$

$$\boxed{x = 80}$$

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5. Nate buys a video-game system.
- The system costs $300
- Games cost $60
- He pays 13% tax on the system and on each game
- He has $850 in total to spend.

After he pays for the system, how many games is Nate able to buy?

a) exactly 12
b) exactly 9
c) no more than 7
d) no more than 3

Step1: Calculate system cost

$$300 \times 1.13 = 339$$

Step2: Find the left over money

$$850 - 339 = 511$$

Step3: Calculate game cost

$$60 \times 1.13 = 67.8$$

Step4: $\frac{511}{67.8} = 7.5$

B. OPEN RESPONSE

Share the Profits

Three partners, Luc, Deb, and Mel, share the profits of a business in the ratio 2:3:7 respectively.
The profit for this year is $176 496.
Determine the share of the profit for each partner.
Show your work.

Step1 : Total shares
$2+3+7 = 12$

Step2 : Luc has $2/12$ of the shares.
$\frac{2}{12} \times \frac{176496}{1} = \$29416$

Deb has $3/12$ of the shares
$\frac{3}{12} \times 176496 = \$44124$

Mel has $7/12$ of the shares
$\frac{7}{12} \times 176496 = \$102956$

∴ Luc gets $29416, Deb gets $44124
and Mel gets $102956

What a bargain!
Susan buys a tennis racket from a store.
- The tennis racket's original price is $75.
- All tennis rackets are on sale for 25% off the original price.

How much does Susan pay for her tennis racket, including 13% tax?
Show your work. → you pay only 75%.

Step1 : Calc. 25% off
$75 \times 0.75 = \$56.25$
Step2 : Calc 10% off
$56.25 \times 0.90 = \$50.625$
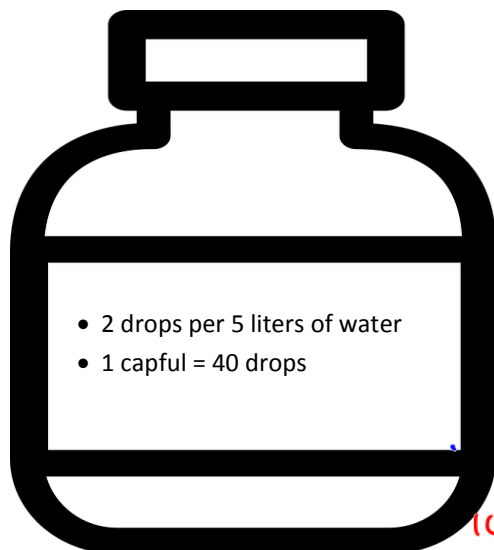Step3 : Calc. tax
$50.625 \times 1.13 = \$57.21$

∴ Susan will pay $57.21.

Healthy Fish
James adds vitamin drops to his fish tank to keep his fish healthy.
If James follows the instructions on the bottle of vitamins, how many capfuls should he add to his 350-litre fish tank?
Show your work.

Let 'x' represent amount of vitamin drops
Step1 : Calculate how much vitamin is needed for the tank.

$350 \cdot \frac{2 \, drops}{5L} = \frac{x}{350L} \cdot 350$ multiply each side by 350

$\overset{70}{\cancel{350}} \cdot \frac{2}{\cancel{5}} = \frac{x}{\cancel{350}} \cdot \cancel{350}$

$\boxed{140 = x}$ 140 drops needed.

- 2 drops per 5 liters of water
- 1 capful = 40 drops

Step2 : Find out how many caps will have 140 drops.
Let "y" represent number of caps.

$140 \frac{1 \, cap}{40 \, drops} = \frac{y}{140 \, drops} \cdot 140$ multiply each side by 140

$\frac{140}{40} = y$

$\boxed{y = 3.5}$

∴ 3.5 capfuls should be added.