Yogurt

A food company produces yogurt in half-cup tubs.

1. The tubs of yogurt are sold for 75¢ each.
   Twenty percent of this is profit for the food company.
   How much profit does the company make on each tub?
   Show your work.
   $$0.2 \times 0.75 = 0.15$$

The machine that fills the half-cup tubs with yogurt runs 10 hours a day for 5 days a week. It fills 1600 tubs an hour.

2. How many gallons of yogurt are needed to fill 1600 tubs?
   Show your calculations.
   $$16 \text{ cups} = 1 \text{ gal}$$
   $$32 \text{ tubs} = 1 \text{ gal}$$
   $$32 \text{ tubs} \times 1600 \text{ tubs} = 32x \text{ gal}$$
   $$x = 50$$

3. How many gallons of yogurt are needed each week?
   Show your work.
   $$16,000 \text{ tubs a day}$$
   $$80,000 \text{ tubs a week}$$
   $$32 \text{ tubs} \times 80,000 \text{ tubs} = 32x \text{ gal}$$
   $$x = 2,500 \text{ gal}$$

4. What is the percent increase in production if the machine runs for 7 days a week instead of 5 days a week?
   Show how you figured it out.
   $$\frac{2 \text{ extra days}}{5} = 0.4$$
   $$= 40\%$$
Yogurt

A food company produces yogurt in half-cup tubs.

1. The tubs of yogurt are sold for 75¢ each.
   Twenty percent of this is profit for the food company.
   How much profit does the company make on each tub?
   
   Show your work.

   \[
   \frac{15}{50} \times \frac{80}{100} = \frac{3}{100} \times \frac{80}{100} = \frac{2400}{10000} = 0.24
   \]

   The machine that fills the half-cup tubs with yogurt runs 10 hours a day for 5 days a week. It fills 1600 tubs an hour.

   2. How many gallons of yogurt are needed to fill 1600 tubs?
      Show your calculations.

   \[
   800 \div 16 = 50
   \]

   3. How many gallons of yogurt are needed each week?
      Show your work.

   \[
   50 \times 10 \times 5 = 2500
   \]

   4. What is the percent increase in production if the machine runs for 7 days a week instead of 5 days a week?
      Show how you figured it out.

   \[
   \frac{3500 - 2500}{2500} = \frac{1000}{2500} = \frac{2}{5}
   \]

   \[
   50 \times 10 \times 7 = 3500
   \]

   \[
   \frac{1000}{2500} = \frac{2}{5}
   \]
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A food company produces yogurt in half-cup tubs.

1. The tubs of yogurt are sold for 75¢ each.
   Twenty percent of this is profit for the food company.
   How much profit does the company make on each tub?
   Show your work.
   \[
   \begin{align*}
   \text{20\% (75¢)} &= p \\
   0.2 (0.75) &= 0.15 \\
   p &= 15¢
   \end{align*}
   \]

   The machine that fills the half-cup tubs with yogurt runs 10 hours a day for 5 days a week. It fills 1600 tubs an hour.

2. How many gallons of yogurt are needed to fill 1600 tubs?
   Show your calculations.
   \[
   \begin{align*}
   \frac{1600 \text{ tubs}}{\text{1 tub}} &\cdot \frac{0.5 \text{ cup}}{1 \text{ tub}} = 800 \text{ cups} \\
   \frac{800 \text{ cups}}{2 \text{ cups}} &\cdot \frac{1 \text{ pint}}{2 \text{ cups}} = \frac{800}{16} = 50 \text{ gal}
   \end{align*}
   \]

3. How many gallons of yogurt are needed each week?
   Show your work.
   \[
   \begin{align*}
   \frac{1600 \text{ tubes}}{1 \text{ hour}} &\cdot \frac{10 \text{ hours}}{1 \text{ day}} = \frac{16000 \text{ tubes}}{1 \text{ day}} \\
   \frac{16000 \text{ tubes}}{1 \text{ day}} &\cdot \frac{5 \text{ days}}{1} = 80000 \text{ tubes filled in 5 days}
   \end{align*}
   \]

4. What is the percent increase in production if the machine runs for 7 days a week instead of 5 days a week?
   Show how you figured it out.
   \[
   \begin{align*}
   \frac{112000 - 80000}{80000} &= \frac{32000}{80000} = 0.4 = 40\%
   \end{align*}
   \]
Yogurt

A food company produces yogurt in half-cup tubs.

1. The tubs of yogurt are sold for 75¢ each.
   Twenty percent of this is profit for the food company.
   How much profit does the company make on each tub?
   Show your work.
   \[ 75 \cdot 0.20 = 1.5 \]

2. How many gallons of yogurt are needed to fill 1600 tubs?
   Show your calculations.
   \[
   \frac{2.5}{5} \div 2 = 8 \cdot 4 = 32
   \]
   \[
   32 \div 1600
   \]

3. How many gallons of yogurt are needed each week?
   Show your work.
   \[ 50 \cdot 10 = 500 \cdot 5 = 2500 \]

4. What is the percent increase in production if the machine runs for 7 days a week instead of 5 days a week?
   Show how you figured it out.
   \[
   \frac{3500}{1000} = 3.5 = 350\%
   \]
Yogurt

A food company produces yogurt in half-cup tubs.

1. The tubs of yogurt are sold for 75¢ each.
   Twenty percent of this is profit for the food company.
   How much profit does the company make on each tub?
   Show your work.
   \[
   \begin{align*}
   1 \text{ tub} &= \frac{1}{2} \text{ cup} \\
   0.75 \times 0.2 &= 0.15 \\
   0.00 &= 0.15
   \end{align*}
   \]
   \[\text{Profit} = 15\,¥\]

The machine that fills the half-cup tubs with yogurt runs 10 hours a day for 5 days a week. It fills 1600 tubs an hour.

2. How many gallons of yogurt are needed to fill 1600 tubs?
   Show your calculations.
   \[1600 \text{ tubs} = 800 \text{ cups} = 400 \text{ pints} = 200 \text{ quarts} = 50 \text{ gallons}\]

3. How many gallons of yogurt are needed each week?
   Show your work.
   \[50 \text{ gal} = \text{ hr.} \times 50 \text{ hrs a week} = 2500 \text{ gallons}\]

4. What is the percent increase in production if the machine runs for 7 days a week instead of 5 days a week?
   Show how you figured it out.
   \[5 \text{ days} = 2500 \text{ gal} \quad 7 \text{ days} = 3500 \text{ gal} \]
   \[\text{Difference} = 1000 \text{ gal} \quad \frac{1000}{2500} = \frac{X}{100}\]
   \[100000 = 2500X \quad X = 40\]