Sierra Leone

WINNING TEAMS: Mathematics

Questions and Answers for Referees

Primary 6 (Term 2) to support JSS1 Term 2

Leh Wi Lan

Numbers and Numeration; Decimals & Percent (M-06-096) **CODE BB1**	Numbers and Numeration; Decimals & Percent (M-06-096) **CODE BB1**
Lesson Title: Conversion from Fractions to Decimals	Lesson Title: Conversion from Fractions to Decimals
Using the **long division** method, convert the fraction $\frac{4}{5}$ into a decimal number up to the thousandths place. 2 minutes	Answer: 0.800 $5 \overline{)4.000}$ $-\ 40$ 40 0 **Answer:** 0.800
Numbers and Numeration; Decimals & Percent (M-06-096) **CODE BB2**	Numbers and Numeration; Decimals & Percent (M-06-096) **CODE BB2**
Lesson Title: Conversion from Fractions to Decimals	Lesson Title: Conversion from Fractions to Decimals
Using the long division method; convert the fraction $\frac{19}{25}$ into a decimal number up to the **thousandths place.** 2 minutes	Answer: 0.760 $25 \overline{)19.000}$ $-\ 0$ 190 $-\ 175$ 150 $-\ 150$ 00 $-\ 0$ 0 Answer: **0 .760**
Numbers and Numeration; Decimals & Percent (M-06-096) **CODE BB3**	Numbers and Numeration; Decimals & Percent (M-06-096) **CODE BB3**
Lesson Title: Conversion from Fractions to Decimals	Lesson Title: Conversion from Fractions to Decimals
Using long division, convert the fraction $\frac{2}{3}$ into a **recurring decimal number.** 2 minutes	Answer: 0.666 $3 \overline{)2.000}$ $-\ 0$ 20 $-\ 18$ 20 $-\ 18$ 2 Answer**: 0.6**

Numbers and Numeration; Decimals & Percent (M-06-096) **CODE BB4**	Numbers and Numeration; Decimals & Percent (M-06-096) **CODE BB4**
Lesson Title: Conversion from Fractions to Decimals	Lesson Title: Conversion from Fractions to Decimals
Using long division, convert the mixed fraction $3\frac{4}{3}$ into a decimal number up to the **thousands place**. Tip: Convert the mixed fraction into an improper fraction, then use long division. 2 minutes	Answer: 0 4. 3 3 3 3 | 1 3. 0 0 0 − 0 1 3 − 1 2 1 0 − 9 1 0 − 9 1 Answer: **4.333**
Numbers and Numeration; Decimals & Percent (M-06-097) **CODE BB5**	Numbers and Numeration; Decimals & Percent (M-06-097) **CODE BB5**
Lesson Title: Conversion from Decimals to Fractions	Lesson Title: Conversion from Decimals to Fractions
Convert the decimal numbers below into simple fractions: a) 0.250 b) 0.78 2 minutes	Answer: a) $0.250 = \frac{250}{1000} = \frac{250 \div 250}{1000 \div 250} = \mathbf{\frac{1}{4}}$ b) $\mathbf{0}.78 = \frac{78}{100} = \frac{78 \div 2}{100 \div 2} = \mathbf{\frac{39}{50}}$
Numbers and Numeration; Decimals & Percent (M-06-097) **CODE BB6**	Numbers and Numeration; Decimals & Percent (M-06-097) **CODE BB6**
Lesson Title: Conversion from Decimals to Fractions	Lesson Title: Conversion from Decimals to Fractions
Convert the decimal numbers below into improper fractions: a) 0.66 b) 0.88 2 minutes	Answer: a) $0.66 = \frac{66}{100} = \frac{66 \div 2}{100 \div 2} = \mathbf{\frac{33}{50}}$ b) $0.88 = \frac{88}{100} = \frac{88 \div 2}{100 \div 2} = \mathbf{\frac{44}{50}}$
Numbers and Numeration; Decimals & Percent (M-06-097) **CODE BB7**	Numbers and Numeration; Decimals & Percent (M-06-097) **CODE BB7**
Lesson Title: Conversion from Decimals to Fractions	Lesson Title: Conversion from Decimals to Fractions
Convert the decimal numbers below into mixed fractions: a) 5.10 b) 11.7 2 minutes	Answer: a) $5.10 = \frac{51}{10} = \mathbf{5\frac{1}{10}}$ b) $11.7 = \frac{117}{10} = \mathbf{11\frac{7}{10}}$

Numbers and Numeration; Decimals & Percent (M-06-098) **CODE BB8**	Numbers and Numeration; Decimals & Percent (M-06-098) **CODE BB8**
Lesson Title: Conversion from Fractions to Percentages	Lesson Title: Conversion from Fractions to Percentages
Explain the word **percentage**. 30 seconds	Answer: A percentage is a number expressed as a fraction out of 100. We use the percent sign **%.**
Numbers and Numeration; Decimals & Percent (M-06-098) **CODE BB9**	Numbers and Numeration; Decimals & Percent (M-06-098) **CODE BB9**
Lesson Title: Conversion from Fractions to Percentages	Lesson Title: Conversion from Fractions to Percentages
Convert the fractions into percentages: a) $\frac{14}{20}$ b) $\frac{6}{15}$ 2 minutes	Answer: a) $\frac{14}{20} = \frac{7}{10} = \frac{7\times10}{10\times10} = \frac{70}{100} = \mathbf{70\%}$ b) $\frac{6}{15} = \frac{2}{5} = \frac{2\times20}{5\times20} = \frac{40}{100} = \mathbf{40\%}$
Numbers and Numeration; Decimals & Percent (M-06-098) **CODE BB10**	Numbers and Numeration; Decimals & Percent (M-06-098) **CODE BB10**
Lesson Title: Conversion from Fractions to Percentages	Lesson Title: Conversion from Fractions to Percentages
Convert the percentages below into simple fractions: a) 120% b) 75% 2 minutes	Answer: a) $120\% = \frac{120}{100} = \frac{120\div20}{100\div20} = \mathbf{\frac{6}{5}}$ b) $75\% = \frac{75}{100} = \frac{75\div25}{100\div25} = \mathbf{\frac{3}{4}}$
Numbers and Numeration; Decimals & Percent (M-06-099) **CODE BB11**	Numbers and Numeration; Decimals & Percent (M-06-099) **CODE BB11**
Lesson Title: Conversion from Percentages to Decimals	Lesson Title: Conversion from Percentages to Decimals
Convert the following percentages into decimal numbers: a) 175% b) 13% 2 minutes	Answer: a) $175\% = \frac{175}{100} = \mathbf{1.75}$ b)$13\% = \frac{13}{100} = \mathbf{0.13}$

Numbers and Numeration; Decimals & Percent (M-06-100) **CODE BB12**	Numbers and Numeration; Decimals & Percent (M-06-100) **CODE BB12**
Lesson Title: Conversion from Decimals to Percentages	Lesson Title: Conversion from Decimals to Percentages
Convert the following decimal numbers into percentages: a) 1.230 b) 0.74 2 minutes	Answer: a) $1.230 = \frac{1230 \div 10}{1000 \div 10} = \frac{123}{100} = \mathbf{123\%}$ b) $0.74 = \frac{74}{100} = \mathbf{74\%}$
N&N; Everyday Arithmetic; Ratio and Proportion (M-06-136) **CODE BB13**	N&N; Everyday Arithmetic; Ratio and Proportion (M-06-136) **CODE BB13**
Lesson Title: Proportion and Fractions	Lesson Title: Proportion and Fractions
Complete the sentence: When two fractions are_____, we say they are in proportion. 30 seconds	Answer: When two fractions are **equivalent**, we say they are in proportion.
N&N; Everyday Arithmetic; Ratio and Proportion (M-06-136) **CODE BB14**	N&N; Everyday Arithmetic; Ratio and Proportion (M-06-136) **CODE BB14**
Lesson Title: Proportion and Fractions	Lesson Title: Proportion and Fractions
The following fractions are equivalent. Using proportions, find the values of x and y a) $\boldsymbol{x}$ and $\frac{1}{3}$ b) $\frac{3}{15}$ and $\frac{1}{\boldsymbol{y}}$ 2 minutes	Answer: a) $\frac{x}{6} = \frac{1}{3}$ by proportionality $3x = 6$ by cross-multiplication Hence: $\boldsymbol{x = 2}$ when dividing both sides by 3. b) $\frac{3}{15} = \frac{1}{y}$ by proportionality $3y = 15$ by cross-multiplication Hence: $\boldsymbol{y = 5}$ when dividing both sides by 3.
N&N; Everyday Arithmetic; Ratio and Proportion (M-06-136) **CODE BB15**	N&N; Everyday Arithmetic; Ratio and Proportion (M-06-136) **CODE BB15**
Lesson Title: Proportion and Fractions	Lesson Title: Proportion and Fractions
The following fractions are equivalent. Using proportions, find the values of v and q . a) $\frac{20}{100}$ and $\frac{\boldsymbol{v}}{5}$ b) $\frac{75}{q}$ and $\frac{3}{2}$ 2 minutes	Answer: a) $\frac{20}{100} = \frac{v}{5}$ by proportionality $100 = 100v$ by cross-multiplication Hence: $\boldsymbol{v = 1}$ when dividing both sides by 100 b) $\frac{75}{q} = \frac{3}{2}$ by proportionality $150 = 3q$ by cross-multiplication Hence: $\boldsymbol{q = 50}$ **w**hen dividing both sides by 3.

N&N; Everyday Arithmetic; Ratio and Proportion (M-06-137) **CODE BB16**	N&N; Everyday Arithmetic; Ratio and Proportion (M-06-137) **CODE BB16**
Lesson Title: Proportion and Fractions	Lesson Title: Proportion and Fractions
In the class, there is a ratio of 3 boys : 2 girls. This means that _____ 30 seconds	Answer: In the class, there is a ratio of 3 boys : 2 girls. This means that **for every 3 boys there are 2 girls**.
N&N; Everyday Arithmetic; Ratio and Proportion (M-06-137) **CODE BB17**	N&N; Everyday Arithmetic; Ratio and Proportion (M-06-137) **CODE BB17**
Lesson Title: Proportion and Fractions	Lesson Title: Proportion and Fractions
I have a bag containing red and blue marbles. The bag has a total of 15 red marbles and 9 blue marbles. a) Determine the **simple fraction** that relates the number of blue marbles to the number of red marbles inside the bag. b) Determine the ratio of blue to red marbles in its simplest form. 2 minutes	Answer: a) $\frac{\text{Number of blue marbles}}{\text{Number of red marbles}} = \frac{9}{15} = \frac{9 \div 3}{15 \div 3} = \mathbf{\frac{3}{5}}$ b) $\frac{\text{Number of blue marbles}}{\text{Number of red marbles}} = \frac{3}{5}$ Ratio $\mathbf{3 : 5}$
N&N; Everyday Arithmetic; Ratio and Proportion (M-06-137) **CODE BB18**	N&N; Everyday Arithmetic; Ratio and Proportion (M-06-137) **CODE BB18**
Lesson Title: Proportion and Fractions	Lesson Title: Proportion and Fractions
The ratio of bananas to melons is given as $\mathbf{30 : 1}$. If there are 300 bananas, how many melons are there? $1\frac{1}{2}$ minutes	Answer: Write the ratio as a fraction: $\mathbf{30 : 1} = \frac{30}{1}$ Find the total number of melons: $\frac{30}{1} = \frac{300}{\text{Number of melons}}$ $30 \times (\text{number of melons}) = 300$ $\text{number of melons} = 10$ Therefore: There are **ten melons** in total.
N&N; Everyday Arithmetic; Ratio and Proportion (M-06-138) **CODE BB19**	N&N; Everyday Arithmetic; Ratio and Proportion (M-06-138) **CODE BB19**
Lesson Title: Equivalent ratio	Lesson Title: Proportion and Fractions
Pick three ratios that are equivalent to $\mathbf{4 : 3}$ a) $8 : 6$ b) $9 : 12$ c) $20 : 15$ d) $32 : 24$ e) $36 : 28$ 2 minutes	Answer: **Correct options** : a, c and d a) $8 : 6 = \frac{8 \div 2}{6 \div 2} = \frac{4}{3} = 4 : \mathbf{3}$ c) $20 : 15 = \frac{20 \div 5}{15 \div 5} = \frac{4}{3} = 4 : \mathbf{3}$ d) $32 : 24 = \frac{32 \div 8}{24 \div 8} = \frac{4}{3} = 4 : \mathbf{3}$

N&N; Everyday Arithmetic; Ratio and Proportion (M-06-138) **CODE BB20**	N&N; Everyday Arithmetic; Ratio and Proportion (M-06-138) **CODE BB20**
Lesson Title: Equivalent ratio	Lesson Title: Proportion and Fractions
Which of the following ratios is equivalent to $\mathbf{27 : 9}$? a) $9 : 6$ b) $3 : 1$ c) $1 : 3$ 30 seconds	Answer: b) $3 : 1$ Working out: $27 : 9 = \frac{27}{9} = \frac{27 \div 9}{9 \div 9} = \frac{3}{1} = \mathbf{3 : 1}$
N&N; Everyday Arithmetic; Ratio and Proportion (M-06-139) **CODE BB21**	N&N; Everyday Arithmetic; Ratio and Proportion (M-06-139) **CODE BB21**
Lesson Title: Proportion and Fractions	Lesson Title: Proportion and Fractions
If the ratios $\mathbf{2 : y}$ and $\mathbf{18 : 81}$ are equivalent, find the value of $\boldsymbol{y}$. 1 minute	Answer: Notice: Since the ratios are equivalent, we can equate the fractions. That is: $\frac{2}{y} = \frac{18}{81}$ $162 = 18y$ by cross-multiplication Hence: $\boldsymbol{y = 9}$ when dividing both sides by 18.
N&N; Everyday Arithmetic; Ratio and Proportion (M-06-140) **CODE BB22**	N&N; Everyday Arithmetic; Ratio and Proportion (M-06-140) **CODE BB22**
Lesson Title: Writing ratio in its simplest form.	Lesson Title: Writing ratio in its simplest form.
Write the following ratios in their simplest form: a) Garry practices 200 math sums in 240 minutes b) 24 blue cars out of 30 cars c) 16 blue lollipops to 24 lollipops 2 minutes	Answer: a) $200 : 240 = \frac{200}{240} = \frac{200 \div 40}{240 \div 40} = \frac{5}{6}$ Simplest form: $\mathbf{5 : 6}$ b) $24 : 30 = \frac{24}{30} = \frac{24 \div 4}{30 \div 4} = \frac{4}{5}$ Simplest form: $\mathbf{4 : 5}$ c) $16 : 24 = \frac{16}{24} = \frac{16 \div 8}{24 \div 8} = \frac{2}{3}$ Simplest form: $\mathbf{2 : 3}$
N&N; Everyday Arithmetic; Ratio and Proportion (M-06-141) **CODE BB23**	N&N; Everyday Arithmetic; Ratio and Proportion (M-06-141) **CODE BB23**
Lesson Title: Sharing Quantities Using Ratio	Lesson Title: Sharing Quantities Using Ratio
Work out each of the following problems. a) Divide $315ml$ in the ratio $2 : 7$ b) Share 120 hours in the ratio $5 : 8$ c) Divide Le $240{,}000$ in the ratio $1 : 3$ 2 minutes	Answer: a) $315ml \times \frac{2}{7} = \frac{630ml}{7} = \mathbf{90ml}$ b) $120 \text{ hours} \times \frac{5}{8} = \frac{240\ hours}{8} = \mathbf{75\ hours}$ c) Le $240{,}000 \times \frac{1}{3} = \frac{Le240{,}000}{3} = \mathbf{Le\ 80{,}000}$

N&N; Everyday Arithmetic; Ratio and Proportion (M-06-141) **CODE BB24**	N&N; Everyday Arithmetic; Ratio and Proportion (M-06-141) **CODE BB24**
Lesson Title: Sharing Quantities Using Ratio	Lesson Title: Sharing Quantities Using Ratio
Pearl has 60 sweets. The ratio of red sweets to green sweets is 3 : 2 . How many red sweets does Pearl have? 2 minutes	Answer: Notice: The number of red sweets in comparison to the total number of sweets is given by the ratio: $\mathbf{3 : 5}$ $\frac{\text{Number of red sweets}}{\text{Total number of sweets}} = \frac{3}{5}$ $\text{Number of red sweets} = \frac{3}{5} \times 60$ Therefore: $\mathbf{Number\ of\ red\ sweets = 36}$
N&N; Everyday Arithmetic; Ratio and Proportion (M-06-142) **CODE BB25**	N&N; Everyday Arithmetic; Ratio and Proportion (M-06-142) **CODE BB25**
Lesson Title: Word Problems with Ratio	Lesson Title: Proportion and Fractions
If Solly drew 10 squares and 30 triangles, then: a) What is the ratio of squares to triangles in **simplest** form? b) What is the ratio of triangles to all shapes in **simplest** form? 2 minutes	Answer: a) $10 : 30 = \frac{10 \div 10}{30 \div 10} = \frac{1}{3} = \mathbf{1 : 3}$ b) Notice: Number of all shapes = Squares + Triangles = 40 $30 : 40 = \frac{30 \div 10}{40 \div 10} = \frac{3}{4} = \mathbf{3 : 4}$
N&N; Everyday Arithmetic; Ratio and Proportion (M-06-143) **CODE BB26**	N&N; Everyday Arithmetic; Ratio and Proportion (M-06-143) **CODE BB26**
Lesson Title: Direct Proportion	Lesson Title: Direct Proportion
Rose gets paid Le 15,000 for each hour she works. If she works 45 hours per week, how much does she earn each week? 2 minutes	Answer: If we let x represent the amount she earns each week, then: $15{,}000 : 1\ \text{hr} = \boldsymbol{x} : 45\ \text{hrs}$ $\frac{Le\ 15{,}000}{1\ \text{hr}} = \frac{x}{45\ \text{hrs}}$ By cross-multiplying: $\boldsymbol{x = 675{,}000\ per\ week}$
N&N; Everyday Arithmetic; Ratio and Proportion (M-06-146) **CODE BB27**	N&N; Everyday Arithmetic; Ratio and Proportion (M-06-146) **CODE BB27**
Lesson Title: Solving Word Problems Involving Fractions	Lesson Title: Solving Word Problems Involving Fractions
Terrence won Le 123,000 from a Saturday night game show. He decides to invest $\frac{3}{4}$ of his winnings and spends the rest with his family. a) How much of the winnings did he invest? b) How much of the winnings did he spend with his family? 2 minutes	Answer: Notice: He invests three-fourths and spends one-fourths of his winnings. a) $Le\ 123{,}000 \times \frac{3}{4} = Le\ 92{,}250$ b) $Le\ 123{,}000 \times \frac{1}{4} = Le\ 30{,}750$

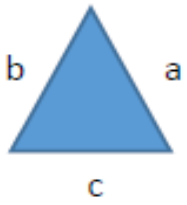
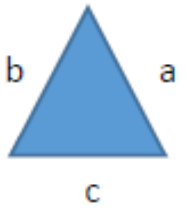
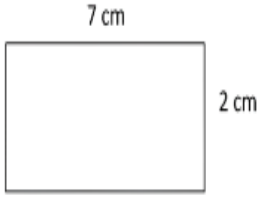
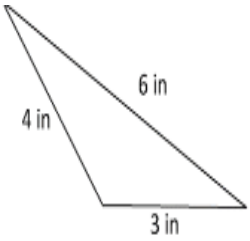
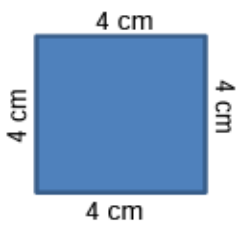
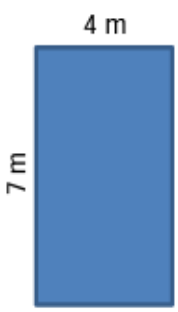
N&N; Everyday Arithmetic; Ratio and Proportion (M-06-146) **CODE BB28**	N&N; Everyday Arithmetic; Ratio and Proportion (M-06-146) **CODE BB28**
Lesson Title: Solving Word Problems Involving Fractions	Lesson Title: Solving Word Problems Involving Fractions
A man spends $\frac{2}{5}$ of his salary on house rent, $\frac{3}{10}$ of his salary on food and $\frac{1}{8}$ of his salary on clothes altogether. What fraction of his salary did he spend? $1\frac{1}{2}$ minutes	Answer: The fraction of the salary spent: $= \frac{2}{5} + \frac{3}{10} + \frac{1}{8}$ $= \frac{2 \times 2}{5 \times 2} + \frac{3}{10} + \frac{1}{8}$ $= \frac{4}{10} + \frac{3}{10} + \frac{1}{8} = \frac{7}{10} + \frac{1}{8}$ $= \frac{7}{10} + \frac{1}{8} = \frac{66}{80}$ $= \frac{66 \div 2}{80 \div 2} = \mathbf{\frac{33}{40}}$
N&N; Everyday Arithmetic; Ratio and Proportion (M-06-146) **CODE BB29**	N&N; Everyday Arithmetic; Ratio and Proportion (M-06-146) **CODE BB29**
Lesson Title: Solving Word Problems Involving Fractions	Lesson Title: Solving Word Problems Involving Fractions
Martha spent $\frac{4}{9}$ of her allowance on food and shopping. What fraction of her allowance is left over? 1 minute	Answer: Let 1 be the whole part of the allowance The fraction of the allowance left over $= 1 - \frac{4}{9} = \frac{9-4}{9} = \frac{5}{9}$
N&N; Everyday Arithmetic; Ratio and Proportion (M-06-148) **CODE BB30**	N&N; Everyday Arithmetic; Ratio and Proportion (M-06-148) **CODE BB30**
Lesson Title: Solving Word Problems Involving Percentages	Lesson Title: Solving Word Problems Involving Fractions
Out of 400 learners who took an IQ test, 240 achieved an above average score. What percentage of the learners achieved an above average score? $1\frac{1}{2}$ minutes	Answer: $\frac{\text{Number of above average learners}}{\text{Total number of learners}} \times 100 = \%$ $\frac{240 \div 80}{400 \div 80} \times 100 = \frac{3}{5} \times 100 = 60\%$ 60% of the learners achieved an IQ score above average
Theme: Everyday Arithmetic; Percentages (M-06-101) **CODE BB31**	Theme: Everyday Arithmetic; Percentages (M-06-101) **CODE BB31**
Lesson Title: Percentage of a Quantity – Simple Problems	Lesson Title: Percentage of a Quantity – Simple Problems
Work out each of the following problems: a) Find 10% of 20 km b) Find 16% of 15 cm 1 minute	Answer: a) $\frac{10}{100} \times 20\text{km} = \frac{200\text{km}}{100} = 2\text{km}$ b) $\frac{16}{100} \times 15\text{cm} = \frac{240\text{cm}}{100} = 2.4\text{cm}$

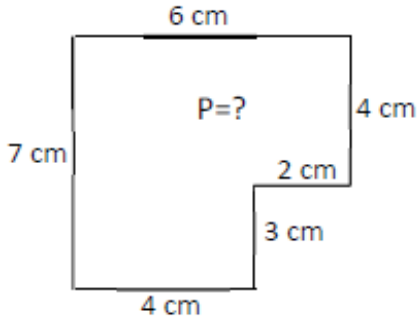
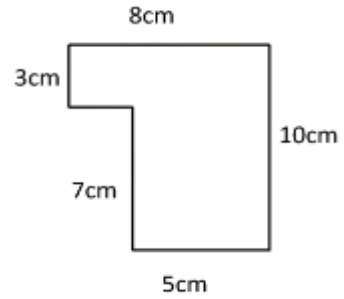
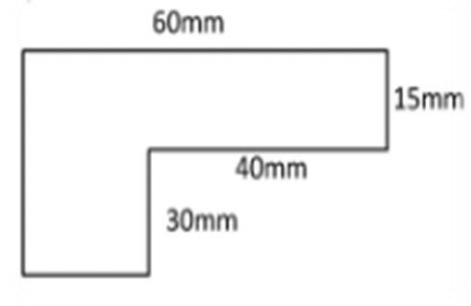
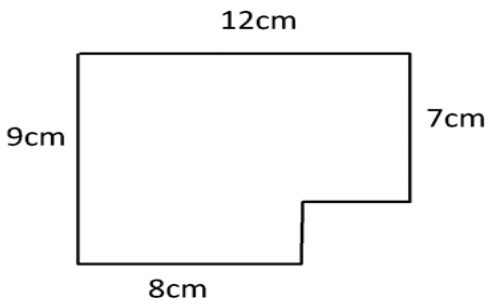
Theme: Everyday Arithmetic; Percentages (M-06-102) **CODE BB32**	Theme: Everyday Arithmetic; Percentages (M-06-102) **CODE BB32**
Lesson Title: Percentage of a Quantity – More Problems	Lesson Title: Percentage of a Quantity – More Problems
Solve the following word problem: A marketplace has a total of 300 stalls available for local vendors to sell their goods. In the first week, 60% of the stalls were occupied. a. Find the actual number of stalls occupied. b. Find the actual number of stalls unoccupied. 2 minutes	Answer: a. $\frac{60}{100} \times 300 \text{ stalls} = 180 \text{ stalls}$ $180 \text{ stalls are occupied.}$ b. Stalls unoccupied = Total stalls – Stalls occupied = 300 – 180 = 120 $120 \text{ stalls are unoccupied.}$
Theme: Everyday Arithmetic; Percentages (M-06-102) **CODE BB33**	Theme: Everyday Arithmetic; Percentages (M-06-102) **CODE BB33**
Lesson Title: Percentage of a Quantity – More Problems	Lesson Title: Percentage of a Quantity – More Problems
Solve the following word problem: There were 1800 onions in a trader's basket. When he got to market, the trader noticed that 12% of the onions were bad and needed to be thrown away. a. How many onions did the trader throw away? b. If the trader sold 450 onions, what percentage of onions did he manage to sell? 3 minutes	Answer: a. $\frac{12}{100} \times 1800 = 216$ **216 onions were thrown away** b. Number of onions available = total onions – bad onions $= 1800 - 216 = 1584 \text{ onions}$ Thus: $\frac{450}{1584} \times 100 \approx 28\%$ **The trader managed to sell 28% of onions.**
Theme: Everyday Arithmetic; Percentages (M-06-103) **CODE B34**	Theme: Everyday Arithmetic; Percentages (M-06-103) **CODE BB34**
Lesson Title: Profit and Loss as Percentages	Lesson Title: Profit and Loss as Percentages
Work out each of the following problems: a) Increase Le 300 by 20% b) Decrease 20L by 4% 2 minutes	Answer: a) $\text{Increase} = 300 + 300 \times \frac{20}{100} = \boldsymbol{Le\ 360}$ b) $\text{Decrease} = 20 - 20 \times \frac{4}{100} = \boldsymbol{19.2L}$
Theme: Everyday Arithmetic; Percentages (M-06-104) **CODE BB35**	Theme: Everyday Arithmetic; Percentages (M-06-104) **CODE BB35**
Lesson Title: Word Problems Involving Profit and Loss Percentage	Lesson Title: Word Problems Involving Profit and Loss Percentage
Solve the following word problem: A family had planted 20 acres of corn. Unfortunately, there was a severe drought and the family **lost** 5% of the harvest. a. How many acres of corn did the family lose because of the drought? b. How many acres of corn was the family able to successfully harvest? 2 minutes	Answer: a. Number of Acres lost $= \frac{5}{100} \times 20 = 1\ acre$ b. Total Harvest = Original acres – lost acres = 20 – 1 = 19 **The family was able to harvest 19 acres of corn.**

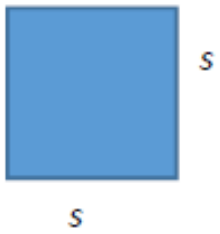
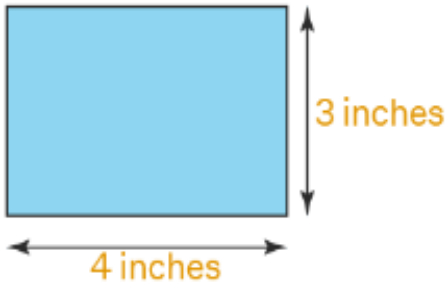
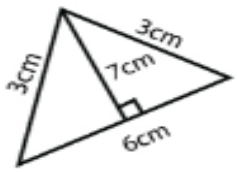
Theme: Everyday Arithmetic; Percentages (M-06-105) **CODE BB36**	Theme: Everyday Arithmetic; Percentages (M-06-105) **CODE BB36**
Lesson Title: Simple Interest	Lesson Title: Simple Interest
Write down the formula for calculating **Simple Interest** 30 seconds	Answer: $A = P(1 + rt)$ Where: A is the **accumulated** amount P is the p**rinciple** amount. r is the i**nterest** percentage t is t**ime** taken to earn interest.
Theme: Everyday Arithmetic; Percentages (M-06-105) **CODE BB37**	Theme: Everyday Arithmetic; Percentages (M-06-105) **CODE BB37**
Lesson Title: Simple Interest	Lesson Title: Simple Interest
Calculate the following using **Simple Interest**: Sara deposits Le100,000 at a bank at an interest rate of 7% per year. How much money did Sara accumulate after 4 years? 2 minutes	Answer: $A = P(1 + rt)$ A = 100,000(1 + 0.07 × 4) = 100,000(1.28) = **Le *128*,000**
Theme: Everyday Arithmetic; Percentages (M-06-105) **CODE BB38**	Theme: Everyday Arithmetic; Percentages (M-06-105) **CODE BB38**
Lesson Title: Simple Interest	Lesson Title: Simple Interest
Enrico bought a car for Le 980,392. He took a Le 570,000 loan from a bank at an interest rate of 17% per year for a 3-year period. What is the total amount (interest and loan) that he would have to pay the bank at the end of 3 years? 2 minutes	Answer: $A = P(1 + rt)$ = 570,000(1 + 0.17 × 3) **= Le 860,700**
Theme: Everyday Arithmetic; Percentages (M-06-105) **CODE BB39**	Theme: Everyday Arithmetic; Percentages (M-06-105) **CODE BB39**
Lesson Title: Simple Interest	Lesson Title: Simple Interest
Solve the following word problem using **Simple Interest**: Mrs Lewis borrowed Le 200,000 from the bank and was charged an interest rate of 15% per year. If she paid the loan off at the end 3 years. a. How much did she pay in total for her loan? b. How much did she pay in interest? 2 minutes	Answer: a. $A = P(1+rt)$ = 200,000(1 + 0.15 × 3) = Le 290,000 She paid **Le 290,000** total for her loan. b. Interest = Accumulated amount – principle amount = Le 290,000 – Le 200,000 = Le 90,000 She paid **Le 90,000** in Interest

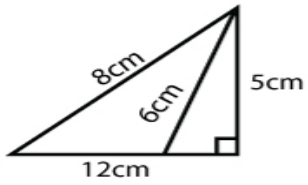
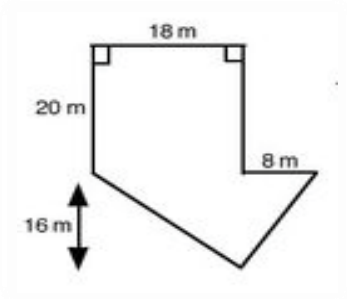
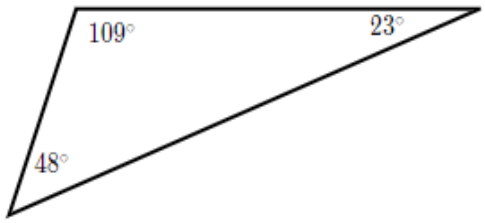
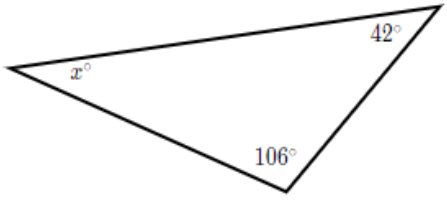
Theme: Measurement and Estimation; Length (M-06-057) **CODE BB40**	Theme: Measurement and Estimation; Length (M-06-057) **CODE BB40**
Lesson Title: Conversion from Inches to Feet and Feet to Inches	Lesson Title: Conversion from Inches to Feet and Feet to Inches
State the rule used to convert from feet to inches and from inches to feet. 1 minute	Answer: Feet to inches → multiply measurement by 12. Inches to feet → divide measurement by 12.
Theme: Measurement and Estimation; Length (M-06-057) **CODE BB41**	Theme: Measurement and Estimation; Length (M-06-057) **CODE BB41**
Lesson Title: Conversion from Inches to Feet and Feet to Inches	Lesson Title: Conversion from Inches to Feet and Feet to Inches
Fill in the blank box with the appropriate sign: a. 4 ☐ 12 = $\frac{1}{3}$ feet long b. 25 ☐ 12 = 300 inches long c. 24 ☐ 12 = 2 feet long $1\frac{1}{2}$ minutes	Answer: a. 4 ÷ 12 = $\frac{1}{3}$ feet long b. 25 × 12 = 300 inches long c. 24 ÷ 12 = 2 feet long
Theme: Measurement and Estimation; Length (M-06-057) **CODE BB42**	Theme: Measurement and Estimation; Length (M-06-057) **CODE BB42**
Lesson Title: Conversion from Inches to Feet and Feet to Inches	Lesson Title: Conversion from Inches to Feet and Feet to Inches
When buying a television, the screen size is measured in inches between opposite corners. How many feet across is a 45-inch television? 30 seconds	Answer: Inches to feet → divide measurement by 12. $\text{feet} = \frac{45 \text{ inches}}{12} = \mathbf{3.75}$
Theme: Measurement and Estimation; Length (M-06-058) **CODE B43**	Theme: Measurement and Estimation; Length (M-06-058) **CODE BB43**
Lesson Title: Measuring Objects in Millimetres and Centimetres	Lesson Title: Measuring Objects in Millimetres and Centimetres
Complete the rule: To convert from millimetres to centimetres, we _____. To convert from centimetres to millimetres, we _____. 2 minutes	Answer: millimetres to centimetres → divide by 10 centimetres to millimetres → multiply by 10

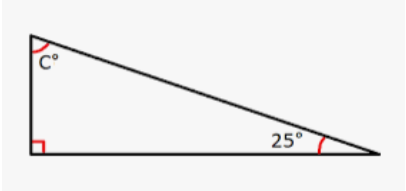
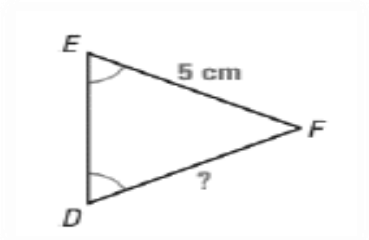
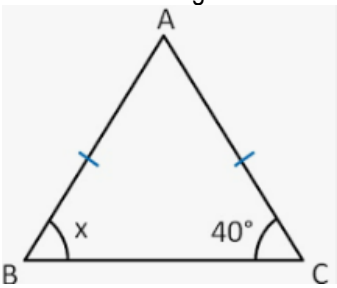
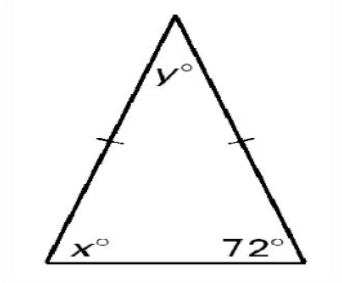
Theme: Measurement and Estimation; Length (M-06-059) **CODE BB44**	Theme: Measurement and Estimation; Length (M-06-059) **CODE BB44**
Lesson Title: Measuring Objects in Millimetres and Centimetres	Lesson Title: Measuring Objects in Millimetres and Centimetres
Complete the equations with multiply (×) or divide (÷): a. 16 ☐ 10 = $\frac{8}{5}$ centimetres long b. 40 ☐ 10 = 4 centimetres long c. 6 ☐ 10 = 60 millimetres long $1\frac{1}{2}$ minutes	Answer: a. 16 ÷ 10 = $\frac{8}{5}$ centimetres long b. 40 ÷ 10 = 4 centimetres long c. 6 x 10 = 60 millimetres long
Theme: Measurement and Estimation; Length (M-06-059) **CODE BB45**	Theme: Measurement and Estimation; Length (M-06-059) **CODE BB45**
Lesson Title: Measuring Objects in Millimetres and Centimetres	Lesson Title: Measuring Objects in Millimetres and Centimetres
Convert the following centimetres to millimetres or millimetres to centimetres by multiplying or dividing: a. 3 millimetres = ____ centimetres b. 20 centimetres = ____ millimetres c. 17 millimetres = ___ centimetres $1\frac{1}{2}$ minutes	Answer: a. 3 millimetres $= 0.3$ centimetres b. 20 centimetres $= 200$ millimetres c. 17 millimetres $= 1.7$ centimetres
Theme: Measurement and Estimation; Length (M-06-060) **CODE BB46**	Numbers and Numeration; Decimals & Percent (M-06-060) **CODE BB46**
Lesson Title: Conversion of Lengths from Metres to Kilometres	Lesson Title: Conversion of Lengths from Metres to Kilometres
Complete the rule: To convert from kilometres to metres, we _____. To convert from metres to kilometres, we _____. 30 seconds	Answer: To convert from kilometres to metres, we **multiply by 1000.** To convert from metres to kilometres, we **divide by 1000.**
Theme: Measurement and Estimation; Length (M-06-060) **CODE BB47**	Numbers and Numeration; Decimals & Percent (M-06-060) **CODE BB47**
Lesson Title: Conversion of Lengths from Metres to Kilometres	Lesson Title: Conversion of Lengths from Metres to Kilometres
Convert the following centimetres to millimetres or millimetres to centimetres by multiplying or dividing: a. 24 kilometres = ____ metres b. 358 metres = ____ kilometres c. 19 kilometres = ___ metres 2 minutes	Answer: a. 24 kilometres = 24,000 metres b. 358 metres = 0.358 kilometres c. 19 kilometres = 19,000 metres

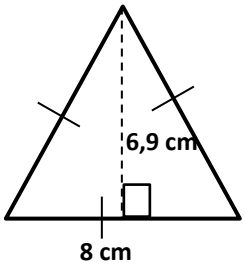
Theme: Geometry Perimeters and Areas (M-06-081) **CODE BB48**	Theme: Geometry Perimeters and Areas (M-06-081) **CODE BB48**
Lesson Title: Perimeter of Shapes	Lesson Title: Perimeter of Shapes
Consider the triangle:  Write down the general formula to calculate the perimeter of the given triangle. 30 seconds	Answer: $P = a + b + c$
Theme: Geometry Perimeters and Areas (M-06-081) CODE BB49	**Theme: Geometry Perimeters and Areas (M-06-081) CODE BB49**
Lesson Title: Perimeter of Shapes	Lesson Title: Perimeter of Shapes
Consider the triangle:  If the perimeter of the triangle is 125cm, determine the expression for **a** in terms of **b** and **c.** 1 minute	Answer: $P = a + b + c$ $125 = a + b + c$ subtract b and c to solve for a. $Hence: a = 125 - b - c$
Theme: Geometry Perimeters and Areas (M-06-081) CODE BB50	**Theme: Geometry Perimeters and Areas (M-06-081) CODE BB50**
Lesson Title: Perimeter of Shapes	Lesson Title: Perimeter of Shapes
Workout the perimeter of the following shapes: 1)  Perimeter = _____ cm 2)  Perimeter = _____ in 2 minutes	Answer: 1) $P = 2(l + w)$ $P = 2(2 + 7)$ $P = \mathbf{18\ cm}$ 2) $P = a + b + c$ $P = 4 + 3 + 6$ $P = \mathbf{13\ in}$
Theme: Geometry Perimeters and Areas (M-06-081) CODE BB51	**Theme: Geometry Perimeters and Areas (M-06-081) CODE BB51**
Lesson Title: Perimeter of Shapes	Lesson Title: Perimeter of Shapes
Work out the perimeter of the following shapes: a)  b)  2 minutes	Answer: 1) $P = 2a + 2a$ $P = 2(4) + 2(4)$ $P = \mathbf{16cm}$ 2) $P = 2(l + w)$ $P = 2(4 + 7)$ $P = \mathbf{22m}$

Theme: Geometry Perimeters and Areas (M-06-082) **CODE BB52**	Theme: Geometry Perimeters and Areas (M-06-082) **CODE BB52**
Lesson Title: Finding the Perimeter of Irregular Shapes	Lesson Title: Finding the Perimeter of Irregular Shapes
Consider the irregular shape:  Calculate the perimeter of the shape. 1 minute	Answer: $P = 6 + 4 + 2 + 3 + 4 + 7$ $P = \mathbf{26cm}$
Theme: Geometry Perimeters and Areas (M-06-082) **CODE BB53**	Theme: Geometry Perimeters and Areas (M-06-082) **CODE BB53**
Lesson Title: Finding the Perimeter of Irregular Shapes	Lesson Title: Finding the Perimeter of Irregular Shapes
Consider the irregular shape below:  Calculate the perimeter of the shape. 1 minute	Answer: $P = 8 + 10 + 5 + 7 + 3 + 3$ $P = \mathbf{36\ cm}$
Theme: Geometry Perimeters and Areas (M-06-082) **CODE BB54**	Theme: Geometry Perimeters and Areas (M-06-082) **CODE BB54**
Lesson Title: Finding the Perimeter of Irregular Shapes	Lesson Title: Finding the Perimeter of Irregular Shapes
Consider the irregular shape:  Calculate the perimeter of the shape. 2 minutes	Answer: $P = 60 + 15 + 40 + 30 + 20 + 45$ $P = \mathbf{210mm}$
Theme: Geometry Perimeters and Areas (M-06-082) **CODE BB55**	Theme: Geometry Perimeters and Areas (M-06-082) **CODE BB55**
Lesson Title: Finding the Perimeter of Irregular Shapes	Lesson Title: Finding the Perimeter of Irregular Shapes
Consider the irregular shape:  Calculate the perimeter of the shape. 1 minute	Answer: $P = 12 + 7 + 4 + 2 + 8 + 9$ $P = \mathbf{42cm}$

Theme: Geometry Perimeters and Areas (M-06-083) **CODE BB56**	Theme: Geometry Perimeters and Areas (M-06-083) **CODE BB56**
Lesson Title: Area of Squares and Rectangles	Lesson Title: Area of Squares and Rectangles
Consider the square:  Write down the general formula for calculating the area of a square. 1 minute	Answer: $P = \boldsymbol{s \times s}$ or $P = \boldsymbol{s^2}$
Theme: Geometry Perimeters and Areas (M-06-083) CODE BB57	**Theme: Geometry Perimeters and Areas (M-06-083) CODE BB57**
Lesson Title: Area of Squares and Rectangles	Lesson Title: Area of Squares and Rectangles
Consider the rectangle:  Write down the general formula for calculating the area. 30 seconds	Answer: $P = \boldsymbol{l \times w}$ or $P = \boldsymbol{lw}$
Theme: Geometry Perimeters and Areas (M-06-083) CODE BB58	**Theme: Geometry Perimeters and Areas (M-06-083) CODE BB58**
Lesson Title: Area of Squares and Rectangles	Lesson Title: Area of Squares and Rectangles
Calculate the area of the following rectangle:  30 seconds	Answer: $P = \boldsymbol{l \times w}$ $P = 4 \times \mathbf{3} = \boldsymbol{12inches}$
Theme: Geometry Perimeters and Areas (M-06-084) CODE BB59	**Theme: Geometry Perimeters and Areas (M-06-084) CODE BB59**
Lesson Title: Area of Triangles	Lesson Title: Area of Triangles
Consider the triangle below and answer the following questions:  a) Determine the perimeter b) Determine the area 2 minutes	Answer: a) $P = 3cm + 6cm + 3cm = 12cm$ b) $A = \frac{1}{2} \times base \times perpendicular\ height$ $A = \frac{1}{2} \times 6cm \times 7cm = \boldsymbol{21cm^2}$

Theme: Geometry Perimeters and Areas (M-06-084) **CODE BB60**	Theme: Geometry Perimeters and Areas (M-06-084) **CODE BB60**
Lesson Title: Area of Triangles	Lesson Title: Area of Triangles
Consider the triangle and answer the following questions:  a) Determine the perimeter. b) Determine the area. 2 minutes	Answer: a) $P = 8\text{cm} + 12\text{cm} + 5\text{cm} = \mathbf{25cm}$ b) $A = \frac{1}{2} \times \text{base} \times \text{perpendicular height}$ $\text{A} = \frac{1}{2} \times 12\text{cm} \times 5\text{cm} = \mathbf{30cm^2}$
Theme: Geometry Perimeters and Areas (M-06-085) **CODE BB61**	Theme: Geometry Perimeters and Areas (M-06-085) **CODE BB61**
Lesson Title: Area of Composite Shapes	Lesson Title: Area of Composite Shapes
Consider the composite shape  Determine the area of the shape. 3 minutes	Answer: $\text{Area of rectangle} = \text{l} \times \text{w}$ $\text{Area of rectangle} = 20\text{m} \times 18\text{m} = \mathbf{360m^2}$ While: $\text{Area of triangle} = \frac{1}{2} \times \text{base} \times \text{peperndicular height}$ $\text{A} = \frac{1}{2} \times 26\text{m} \times 16\text{cm} = \mathbf{208m^2}$ Thus: $\text{Area of composite shape} = 208\text{m}^2 + 360\text{m}^2$ $= \mathbf{568m^2}$
Theme: Geometry of Triangles (M-06-091) **CODE BB62**	Theme: Geometry of Triangles (M-06-091) **CODE BB62**
Lesson Title: Properties of Right-Angled Triangles	Lesson Title: Properties of Right-Angled Triangles
Calculate the sum of the interior angles of the triangle:  30 seconds	Answer: Sum of the interior angles $= 48^\circ + 23^\circ + 109^\circ = \mathbf{180^\circ}$
Theme: Geometry of Triangles (M-06-091) **CODE BB63**	Theme: Geometry of Triangles (M-06-091) **CODE BB63**
Lesson Title: Properties of Right-Angled Triangles	Lesson Title: Properties of Right-Angled Triangles
Find the missing angle in the triangle:  1 minute	Answer: Sum of the interior angles $x^\circ + 106^\circ + 42^\circ = 180^\circ$ $x^\circ = 180^\circ - 106^\circ - 42^\circ$ $\boldsymbol{x^\circ = 32^\circ}$

Theme: Geometry of Triangles (M-06-091) **CODE BB64**	Theme: Geometry of Triangles (M-06-091) **CODE BB64**
Lesson Title: Properties of Right-Angled Triangles	Lesson Title: Properties of Right-Angled Triangles
Consider the triangle:  Determine the value of the missing angle c° 1 minute	Answer: $\text{Sum ofthe angles } = c^\circ + 25^\circ + 90^\circ$ $180^\circ = c^\circ + 25^\circ + 90^\circ$ $180^\circ - 25^\circ - 90^\circ = c^\circ$ $\boldsymbol{c^\circ = 65^\circ}$
Theme: Geometry of Triangles (M-06-092) **CODE BB65**	Theme: Geometry of Triangles (M-06-092) **CODE BB65**
Lesson Title: Properties of Isosceles Triangles	Lesson Title: Properties of Isosceles Triangles
Consider the triangle below:  Determine the length of side DF. 30 seconds	Answer: Note: $\triangle$DFE is an isosceles triangle Then it follows that: $\text{DF} = \text{EF}$ (sides opposite equal angles) $\text{Hence: } \mathbf{DF = 5cm}$
Theme: Geometry of Triangles (M-06-092) **CODE BB66**	Theme: Geometry of Triangles (M-06-092) **CODE BB66**
Lesson Title: Properties of Isosceles Triangles	Lesson Title: Properties of Isosceles Triangles
Consider the triangle below:  Determine the size of angle x. 30 seconds	Answer: ΔABC is an isosceles triangle Then: $40^\circ = x$ (angles opposite equal sides) $\text{Hence: } \boldsymbol{x = 40^\circ}$
Theme: Geometry of Triangles (M-06-092) **CODE BB67**	Theme: Geometry of Triangles (M-06-092) **CODE BB67**
Lesson Title: Properties of Isosceles Triangles	Lesson Title: Properties of Isosceles Triangles
Consider the triangle:  Determine the size of angles $\boldsymbol{x^\circ}$ and $\boldsymbol{y^\circ}$ 30 seconds	Answer: Note: The triangle is an isosceles triangle Then: $\boldsymbol{72^\circ = x^\circ}$ (angles opposite equal sides) And by the sum of interior angles of a triangle, we have: $180^\circ = 72^\circ + 72^\circ + y^\circ$ $180^\circ - 144^\circ = y^\circ$ Therefore: $\boldsymbol{y^\circ = 36^\circ}$

Theme: Geometry of Triangles (M-06-093) **CODE BB68**	Theme: Geometry of Triangles (M-06-093) **CODE BB68**
Lesson Title: Properties of Equilateral Triangles	Lesson Title: Properties of Equilateral Triangles
Consider the **equilateral** triangle below:  a) Determine the perimeter of the triangle b) Determine the area of the triangle. 2 minutes	Answer: a) $P = 8cm + 8cm + 8cm = \mathbf{24cm}$ b) $A = \frac{1}{2} \times \text{base} \times \text{perpendicular height}$ $A = \frac{1}{2} \times 8cm \times 6.9cm = \mathbf{27.6cm^2}$
Theme: Geometry of Triangles (M-06-093) **CODE BB69**	Theme: Geometry of Triangles (M-06-093) **CODE BB69**
Lesson Title: Properties of Equilateral Triangles	Lesson Title: Properties of Equilateral Triangles
Solve the following word problem: Consider an equilateral triangle whose sides are 40mm. a) What is the perimeter of the equilateral triangle? b) If the area is $320mm^2$, find the height of the equilateral triangle . 2 minutes	Answer: a) $P = 40mm + 40mm + 40mm = \mathbf{120mm}$ b) $A = \frac{1}{2} \times base \times peperndicular\ height$ $320mm^2 = \frac{1}{2} \times 40mm \times \text{height}$ $640mm^2 = 40mm \times \text{height}$ $\frac{640mm^2}{40mm} = \text{height}$ Thus: $\mathbf{height = 16mm}$