

Ratio

Ay ni ratio ja mepadchung hini ohan pfilang ay ni oha

Example:

15 cha an linala-e ay ni ohan class ja 19 cha an pfinapfai Ngay ratio ni linala-e ay ni pfinapfai?

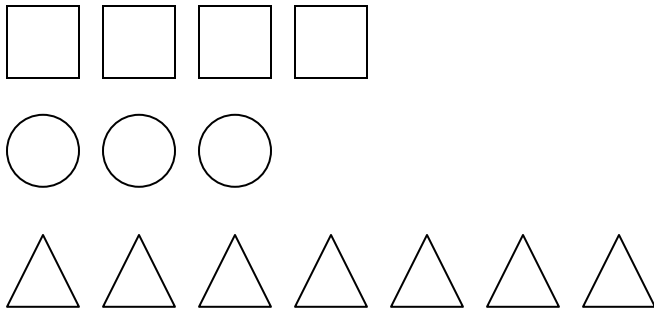
There are 15 boys in a class and 19 girls. What is the ration of boys to girls?

Answer: 15:19

Ngay ratio ni pfinapfai ay ni lnala-e?

What is the ratio of the girls to boys?

Answer: 19:15



What is the ratio of

- 1) Squares to tringle?
 - 2) Squares to circle?
 - 3) Circle to squares?
 - 4) Triangle to circles?
 - 5) Triangles to squares?
 - 6) Circles to triangles?
- 7) Himpolo han empfalay cha Mrs. Reyes, 7 an pfinapfai ja 3 an linla-e. Ngay ratio ni linala-e ay ni pfinapfai?
Mrs. Reyes has ten children, 7 girls and 3 boys. What is the ratio of the boys to girls?

Proportion

Nu munchochodcha hini ratio ni chugwa an pfilang (quantity) ja alln ta-o hi un cha proportional.

Example: Hini ratio ni arena ayni ahukar an ma-usar an mun-ephod hi tenapay ja 2:1. Monchochodcha hinuy an ratio hotti proportional cah nuy erena ja ahukar.

[Example: Hini tagwon n ohan unga ja hini chamot na ja achi proportiona Mapfalin an mapigwa hini tagwa muti un it-ittang hini nidchum ay ni chamot na.]

Example: Manong Peter earns P 144 for 8 hours work. How much will he ear in 5 hours at the same rate of pay?

$$\begin{aligned} 8 \text{ hours} &- P 144 \\ 1 \text{ hour} &- P 144 \div 8 \text{ or } P 144 \times \frac{1}{8} \\ 5 \text{ hours} &- P 144 \times \frac{5}{8} = P 90 \end{aligned}$$

He earns P 90

Example: 3 shirts cost of P 196.50. How much do 7 costs?

$$\begin{aligned} 3 \text{ shirts} &- P 196.50 \\ 1 \text{ shirt} &- P 196.50 \times \frac{1}{3} \\ 7 \text{ shirts} &- P 196.50 \times \frac{7}{3} \\ &= P 458.50 \\ 7 \text{ shirts costs} & P 458.50 \end{aligned}$$

- 1) Manang Lilian earns P 84 for 8 hours work. How much will she earn for 12 hours work?
- 2) 7 notebooks cost P 50.75. How much do 4 costs?
- 3) Manang Rita can sew 4 skirts in 5 hours. How long will it take to sew 8 skirts if she works at the same speed?

Equivalent Ratios

nu gway tatakhu an na-amog ja kompormi hini pfilang cha ja hihiya hini ratio ni takhu ay ni hu-i cha'.

The ratio of people: feet is 1:2

Nu 10 hana tatakhu hot 20 hana hu-i cha.

1:2 ja numpadchung ay ni 10:20

Nu 50 hana hu-i cha ja ma-inila an 25 hana tatakhu.

1:2 = 5:50

Nu hihiya hini imultiply ja hihiya hini ratio.

Example: $1:2 = 2:4 = 3:6 = 4:8$ etc.

Mapfalin an moncancel an amat hi fraction.

Example: $16:20 = 4:5$ lowest terms.

- 1) The ratio of flour to sugar in a cake is 2:1. If 4 kilos of flour are used, how much sugar is needed?
- 2) If 100g sugar is used, how much flour is needed?
- 3) The ratio of pink flowers to white flowers in a packet of seeds is 2:3. If there are 20 pink ones, how many white ones are there?

Itula' mu hini ot-ottong ay ni chugwa an fraction.

Write the bigger of the two fractions.

1) $\frac{1}{3}$, $\frac{1}{4}$

2) $\frac{1}{5}$, $\frac{1}{3}$

3) $\frac{1}{2}$, $\frac{1}{3}$

4) $\frac{1}{2}$, $\frac{2}{3}$

5) $\frac{2}{5}$, $\frac{1}{3}$

6) $\frac{4}{5}$, $\frac{3}{4}$

Ornusom hay hato ta mahhun hini it-ittangan ja unot hini metob ingkhana ay ni ot-ottongan.
 Arrange these from the smallest to the biggest in order of size.

$$\frac{3}{5} \quad \frac{1}{4} \quad \frac{2}{3} \quad \frac{1}{2} \quad \frac{4}{5} \quad \frac{1}{5} \quad \frac{1}{3}$$

Percentage

Hini percent ja oma'-at hi proportion

1% ja hihiya ay ni $\frac{1}{100}$.

1% ni 25 ja hihiya ay ni $25 \div 100$ or $25 \times \frac{1}{100}$

17% ni 25 ja hihiya ay ni $25 \times \frac{1}{100}$

Example: Write 11% as a fractio.

$$35\% = \frac{35}{100} = \frac{7}{20}$$

Write these percentages as fractions.

- 1) 43%
- 2) 50%
- 3) 80%
- 4) 25%
- 5) 75%
- 6) 95%

Example: Write $\frac{3}{5}$ as a percentage

Multiply by 100. $\frac{3}{5} \times 100 = 60$
 $\frac{3}{5} = 60\%$

Example: Write 5 as a percentage to the nearest whole number.

$$\frac{5}{9} \times 100 = \frac{500}{9}$$

$\frac{5}{9} = 56\%$ to the nearest whole number.

Write these fractions as percentages:

- 1) $\frac{1}{5}$
- 2) $\frac{14}{25}$
- 3) $\frac{17}{20}$
- 4) $\frac{31}{100}$
- 5) $\frac{1}{3}$
- 3) $\frac{5}{7}$

$\frac{4}{9}$ Numerator, hini pfilang an gwa ay ni ngato na.
 Denominator, hini pfilang an gwa ay ni ahpfuna.

$\frac{1}{3}$	$\frac{4}{7}$	$\frac{5}{8}$	$\frac{1}{4}$	$\frac{7}{8}$	$\frac{2}{5}$	$\frac{1}{2}$
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- 1) Itula' mu ni fraction an 2 hini numerator na.
Write the fraction which has numerator 2.
- 2) Itula' mu hini fraction an 4 hini denominator na.
Write the fraction which has 4 as its denominator.
- 3) Ittula' mu hini fraction an 5 hini numerator na na.
Write the fraction which has a numerator of 5.
- 4) Itula' mu hana chugwa an fraction an numpapadchung.
Write the two fractions which have the same denominator.

Equivalent Fractions:

$$\frac{1}{2} = \frac{2}{4} = \frac{3}{6} = \frac{4}{8} = \frac{5}{10} = \frac{6}{12} \quad \text{etc.}$$

$$\frac{3}{4} = \frac{6}{8} = \frac{9}{12} = \frac{12}{16} \quad \text{etc.}$$

$$\frac{5}{11} = \frac{10}{22} = \frac{15}{33} \quad \text{etc.}$$

Nu hihiya ni imultiply ay ni numerator ja denominator hot hihiya hini pfaor na.

If the numerator and denominator are multiplied by the same number, then the value is the same.

Itula' mu hini chugwa an fractions an numpapadchung chi pfalor na.

Write the two fractions which have the same value.

$$1) \frac{2}{4}, \frac{2}{2}, \frac{1}{2} \quad 2) \frac{1}{3}, \frac{3}{9}, \frac{3}{12} \quad 3) \frac{1}{3}, \frac{2}{5}, \frac{6}{15}$$

$$4) \frac{1}{2}, \frac{10}{20}, \frac{12}{22} \quad 5) \frac{10}{18}, \frac{25}{30}, \frac{5}{6} \quad 6) \frac{13}{15}, \frac{21}{23}, \frac{26}{30}$$

$$\frac{3}{4} = \frac{\quad}{24}$$

$$3 \times 6 = 24$$

$$3 \times 6 = 18$$

$$\frac{3}{4} = \frac{18}{24}$$

$$\frac{2}{5} = \frac{18}{?}$$

$$2 \times 9 = 18$$

$$5 \times 9 = 45$$

$$\frac{2}{5} = \frac{18}{45}$$

completowom hay hato an fraction;

Complete these fractions:

$$1) \frac{1}{2} = \frac{\quad}{6} \quad 2) \frac{2}{5} = \frac{10}{?} \quad 3) \frac{7}{8} = \frac{?}{40} \quad 4) \frac{5}{9} = \frac{\quad}{63} \quad 5) \frac{4}{7} = \frac{16}{?} \quad 6) \frac{24}{30} = \frac{\quad}{5}$$

Cancel. Reduce to Lowest terms.

$$\frac{12}{15} \text{ Mapfalin an madivide hini numerator ja denominator hi 3.}$$

The numerator and denominator can be divided by 3.

$$12 \div 3 = 4$$

$$15 \div 3 = 5$$

$$\frac{12}{15} = \frac{4}{5}$$

$$\frac{30}{45} \text{ Madivide hini 30 ja 45 hi 5.}$$

30 and 45 can be divided by 5.

$$30 \div 5 = 6$$

$$45 \div 5 = 9$$

$\frac{30}{45} = \frac{6}{9}$ Muti mapfalin an madivide khu hi 3.
 But it can be divided 3 again.

$$6 \div 3 = 2$$

$$9 \div 3 = 3$$

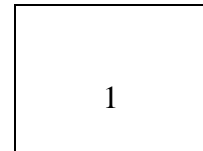
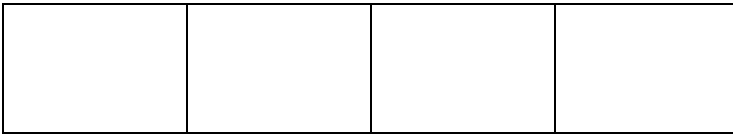
$$\frac{30}{45} = \frac{2}{3}$$

Reduce these fractions to their lowest terms

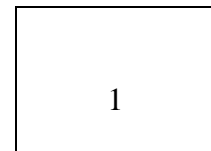
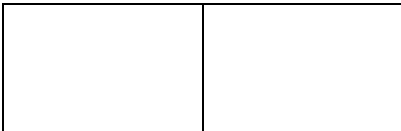
- 1) $\frac{6}{8}$ 2) $\frac{20}{40}$ 3) $\frac{49}{56}$ 4) $\frac{18}{30}$ 5) $\frac{14}{22}$ 6) $\frac{200}{500}$

Mixed Numbers:

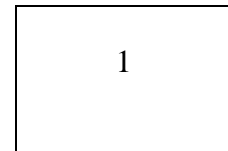
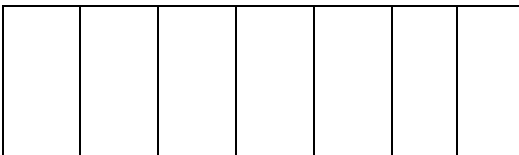
Hay mixed Numbers jo gwa han pfilang ja han fraction an nidchum.
 A mixed Number has a whole Number and Fraction.



$3\frac{1}{2}$ three whole one and one half.



$\frac{12}{5}$ one whole and two fifth.



Shade or color the part representing the Fraction $6\frac{1}{2}$



Improper Fractions

Hini ayya improper fraction ja ot'ottong hini

Numerator mu hini denominator:

- An improper fraction has a numerator which is bigger than the denominator.

Examples:

$$\frac{3}{2}, \frac{30}{7}, \frac{11}{3}$$

Mapfalin an pumfalinam hay improper fraction hi mixed number.

An improper fraction can be turned into a mixed number.

Example:

$$\frac{13}{3}$$

Hotti mundivide a ay ni 13 hi 3 ta tikhan nu atana hana whole numbers

So devide 13 by 3 to see how many whole numbers are there.

$$3/1=1$$

$$3 \overline{)13} \begin{array}{l} 4 \text{ r. } 1 \\ \underline{12} \\ 1 \end{array}$$

Hitay oha an nahagwar ja $\frac{1}{3}$.
This remainder of one is $\frac{1}{3}$.

$$\frac{13}{3} = 4\frac{1}{3}$$

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$$\frac{13}{3} = 4\frac{1}{3}$$

Express these improper fractions as mixed Number.

Pumpfalinan hay hato improper fraction hi mixed.

1) $\frac{1}{2}$

2) $\frac{11}{13}$

3) $\frac{35}{6}$

4) $\frac{48}{4}$

5) $\frac{54}{8}$

6) $\frac{33}{7}$

7) $\frac{123}{5}$

8) $\frac{80}{9}$

9) $\frac{175}{10}$

10) $\frac{50}{23}$