Decimals

Grade 5

① $7\frac{1}{5} + 3\frac{1}{4}$

$\frac{25}{7}$ Ans

Revision of previous concepts

$\Rightarrow \frac{36}{5} + \frac{13}{4}$

① LCM of denominators

LCM of 5 and 4 = 20

② Make their denominators same (20) by multiplying these fractions with a proper no.

$\frac{36 \times 4}{5 \times 4} = \frac{144}{20}$

$\frac{13 \times 5}{4 \times 5} = \frac{65}{20}$

$\frac{7}{5} + \frac{9}{5} = \frac{16}{5}$

Equivalent fractions

$\left(\frac{2}{3}\right) \quad \frac{4}{6} \quad \left(\frac{8}{12}\right) \quad \frac{6}{9}$

Revision of previous concepts

$$\frac{36}{5} + \frac{13}{4}$$

$$\frac{144}{20} + \frac{65}{20} = \frac{144+65}{20} = \frac{209}{20}$$

$$\frac{9}{7} + \frac{3}{5} = \frac{45}{35} + \frac{21}{35} = \frac{66}{35} = 1\frac{31}{35}$$

Q. Divide $\frac{5}{36}$ by $\frac{7}{18}$

Revision of previous concepts

$\frac{5}{14}$

$7\frac{2}{5} = \frac{37}{5}$

add: $\frac{1}{4} + \frac{1}{3}$

add $5\frac{5}{11}$ and $3\frac{2}{33}$

$8\frac{16}{33}$

$\frac{60 \times 3}{11 \times 3} + \frac{101}{33}$

$\frac{180}{33} + \frac{101}{33}$

$\frac{281}{33}$ Subtract $10\frac{1}{11}$

$1\frac{19}{33}$

Out of a group of 48 people, if 15 went for boating, 21 went for shopping and rest of them went for watching movie, then what fraction of total people went for watching movie?

Revision of previous concepts

$$\frac{12}{48} = \boxed{\frac{1}{4}}$$

Simplify: $\frac{17}{11} + \frac{15}{3} + \frac{7}{6}$

$7\frac{44}{66}$

Revision of previous concepts

$$\frac{9}{7} + \frac{2}{3}$$

Revision of previous concepts

$$\frac{27}{21} + \frac{14}{21} = \frac{41}{21}$$

Decimals

$\frac{2}{5}$ | fraction

- $\frac{2}{10}$ | fraction with denominator '10' ⇒ aka decimal fractions
- $\frac{51}{100}$ | fraction with denominator '100' ⇒ aka decimal fraction

"Fractions in which denominator are 10, 100, 1000, 10000, ... etc. are known as decimal fraction."

⇒ eg: $\frac{92}{100}$

$\frac{5}{1000}$

$\frac{631}{1000}$

$\frac{19}{10}$

$\frac{1}{10} \Rightarrow .1$

$\frac{2}{10} \Rightarrow .2$

$\frac{3}{10} \Rightarrow .3$

$\frac{9}{10} \Rightarrow .9$

$\frac{10}{10} \Rightarrow 1.0$

$\frac{12}{10} \Rightarrow 1.2$

$\frac{99}{10} \Rightarrow 9.9$

$\frac{12}{100} = .12$

$\frac{129}{100} = 1.29 = 1.29$

$\frac{325}{100} = 3.25$

$\frac{39}{100} = .39$

$\frac{6}{100} = .06$

$\frac{9}{100} = .09$

0.6

$\frac{439}{1000} = .439$

$\frac{2365}{1000} = 2.365$

$\frac{67}{1000} = .067$

$\frac{4}{1000} = .004$

$\frac{129}{10} = 1.29$ ✗ 12.9 ✓

$\frac{36}{10} = 3.6$

$\frac{1162}{10} = 116.2$

$\frac{42596}{100} = 425.96$

Decimal point

Decimal fraction

Decimal representation or Decimal number or Decimals.

Decimals

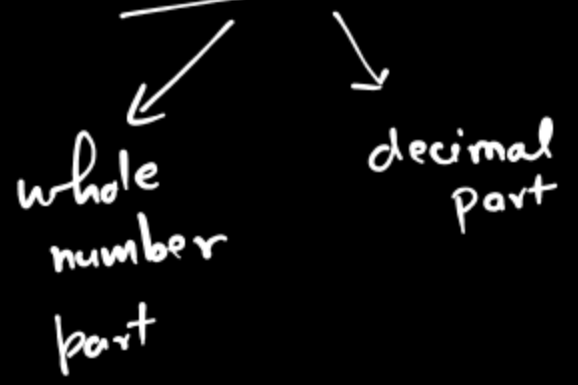
The numbers written using decimal point.

Eg. 1.6 , .9 , 12.55 , 0.006 , 3.19

Eg. 12.54 is a decimal number

↓

has two parts



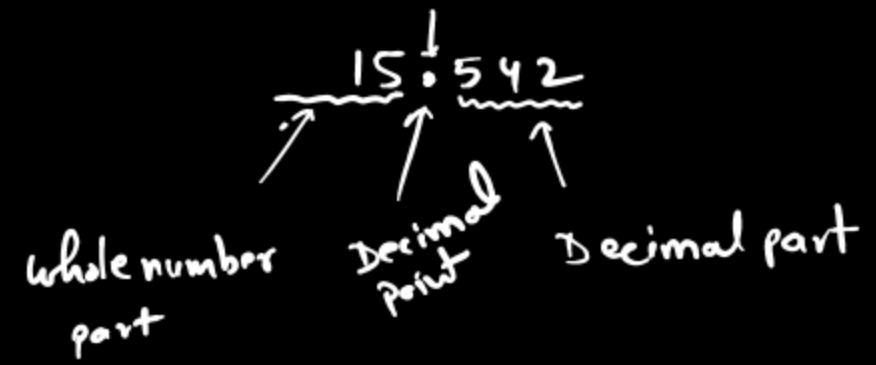
$\frac{9}{100} = .09$

$\frac{2}{10} = .2$

$\frac{5}{1000} = .005$

$\frac{549}{1000} = .549$

eg.



=> Whole number and decimal part are separated by a decimal point

→ Whole number part is to the left of decimal point.

→ Decimal part is to the right of the decimal point.

→ Absence of any part is represented by 0 (zero).

eg: $\frac{5}{10} = .5 = 0.5$

$.68 = 0.68$

$89 = 89.00$

$12 = 12.0$

Place Value Chart

Ten thousands	Thousands	Hundreds	Tens	Ones	Decimal	Tenths	Hundredths	Thousandths
10000	1000	100	10	1	.	$\frac{1}{10}$	$\frac{1}{100}$	$\frac{1}{1000}$

5 9 2 7 . 4 3 6

4 ↑ tenths, 3 ↑ hundredths, 6 ↑ thousandths

5927.436

1238.549 "Decimal form"

Place value of 5 = $\frac{5}{10}$ = .5 5 tenths = $\frac{5}{10}$ = .5

Place value of 4 = $\frac{4}{100}$ = 0.04 $\left|\frac{4}{100}\right|$

Place value of 9 = $\frac{9}{1000}$

$1000 + 200 + 30 + 8 + \frac{5}{10} + \frac{4}{100} + \frac{9}{1000}$ "Expanded form"

Nine tenths $= \frac{9}{10} = 0.9$

Eight and six tenths $= 8.6$

Thirty and twenty four hundredths $= 30\frac{24}{100} = 30.24$

Decimal number to Decimal fraction

$0.6 = \frac{6}{10}$

$0.9 = \frac{9}{10}$

$0.19 = \frac{19}{100}$

$2.53 = \frac{253}{100}$

$12.01 = \frac{1201}{100}$

$$4.73 = \frac{4.73}{100}$$

$$\frac{437}{100} = 4.37$$

$$0.67 = \frac{67}{100}$$

Decimal Places

"No. of digits after decimal point"

14.679 ⇒ 3 decimal places

15.057 ⇒

015.930

15.93

15.3 =
- 15.30 — 2 decimal places
- 15.300 — 3 decimal places
- 15.3000 — 4 decimal places

015 = 15

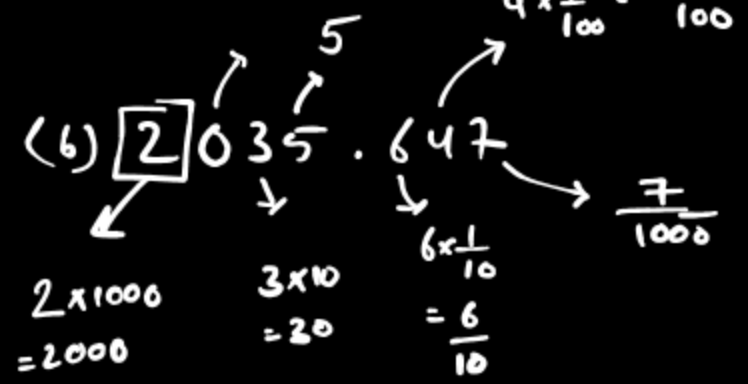
0150 = 150

015.720 = 15.72
ppp

Decimal number to expanded form.

(a) $29.053 \longleftrightarrow$

(b) 2035.647



Expand 19.67 (expanded form)

$$19.67 = 10 + 9 + \frac{6}{10} + \frac{7}{10}$$

$$137.349 = 100 + 30 + 7 + \frac{3}{10} + \frac{4}{100} + \frac{9}{1000}$$

$2605.034 = 2000 + 600 + 0 + 5 + 0 + \frac{3}{100} + \frac{4}{1000}$

$= 2000 + 600 + 5 + \frac{3}{100} + \frac{4}{1000}$

$3 \times \frac{1}{100}$

$\frac{4000}{1000} = 4$

Q1. Write down following decimals in expanded form.

(a) 271.32 (b) 407.65 (c) 3029.507

(d) 0.008 (e) 80.80 (f) 0.427

Q2. Write the following as decimal fractions.

(a) 0.7 (b) 0.19 (c) 0.005 (d) 0.71

Q3. Write the following in decimal form.

(a) $\frac{5}{10}$ (b) $\frac{57}{1000}$ (c) $2\frac{3}{10}$ (d) $71\frac{11}{10}$

(e) $5\frac{16}{1000}$ (f) $\frac{9}{100}$.

Decimal places

95829.9792 → 4 decimal places.

write it in expanded form.

$$90000 + 5000 + 800 + 20 + 9 + \frac{9}{10} + \frac{7}{100} + \frac{9}{1000} + \frac{2}{10000}$$

Like and Unlike Decimals

Like Decimals

Decimals having same number of decimal places are called like decimals

eg: 4.9, 5.4, 1.1, 12.5, 67.1

Unlike:- Decimals having different number of decimal places are called unlike decimals.

eg: 4.93, 5.4,

are unlike.

12.53 , 8.968 , 0.7 are unlike decimals.

$$0.7 = \frac{7}{10} = \frac{7 \times 10}{10 \times 10} = \frac{70}{100} = 0.70 \Rightarrow \boxed{0.7 = 0.70}$$

$$0.70 = \frac{70}{100} = \frac{70 \times 10}{100 \times 10} = \frac{700}{1000} = 0.700 \Rightarrow \boxed{0.70 = 0.700}$$

$$\boxed{0.7 = 0.70 = 0.700}$$

⇒ Putting any number of zeros to the extreme right side of the decimal part does not change the decimal number.

$6.83 = 6.830$ } equivalent decimals

They are equal but unlike decimal.

Q. Convert 16.23, 8.7, 0.534, 118.84 into set of like decimals.

Sol: ⇒ ① Look for the number with max. decimal place

Max. decimal place is three. in 0.534.

- Convert each one of the given decimal, into equivalent decimals having three decimal places by placing zero or zeros to the extreme right of the decimal part.

$0.8 = 0.80 = 0.800$

Unlike decimals and also equivalent.

16.23 = 16.230

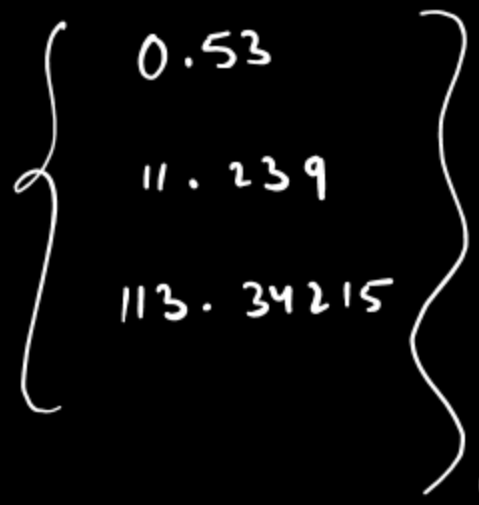
8.7 = 8.700

0.534 = 0.534

118.84 = 118.840

Like decimals

Unlike



Unlike decimals

0.53000
11.23900
113.34215

Like decimals. (5 decimal places)

(i) 36.45 [>] 24.29

(ii) 13.5 [>] 13.05

(iii) 0.640 [<] 0.645

$>, <, =$

Rule

1. First look for whole no. part.
   Decimal with greater wholeno. part will be greater.
2. When whole no. part is same, then look for tenths place.
   Decimal with bigger digit at tenths place is bigger.

Q. Write the following decimal number in ascending order.

6.01, 3.85, 0.867, 0.9, 8.23, 3.852

$0.867 < 0.9 < 3.85 < 3.852 < 6.01 < 8.23$

~~6.01~~

Q. Arrange in descending order:

0.1, 0.01, 0.001, 1.1, 1.01

$1.1 > 1.01 > 0.1 > 0.01 > 0.001$

⇒ 6.06, 6.6, 6.006, 0.66, 0.06, 0.6

$6.6 > 6.06 > 6.006 > 0.66 > 0.6 > 0.06$.

$0 \rightarrow \infty$

$0 \rightarrow$ order | power

Integers $\quad 0 \quad \boxed{2}$

$\boxed{-1, -2, -3, \ldots -\infty}$

Integers = (whole numbers + Negative numbers)

Negative numbers ← | → Positive numbers

∞ - ... , -5 , -4 , -3 , -2 , -1 , 0 , 1 , 2 , 3 , 4 , 5 , ... , ∞

Zero

[Neither negative nor positive]

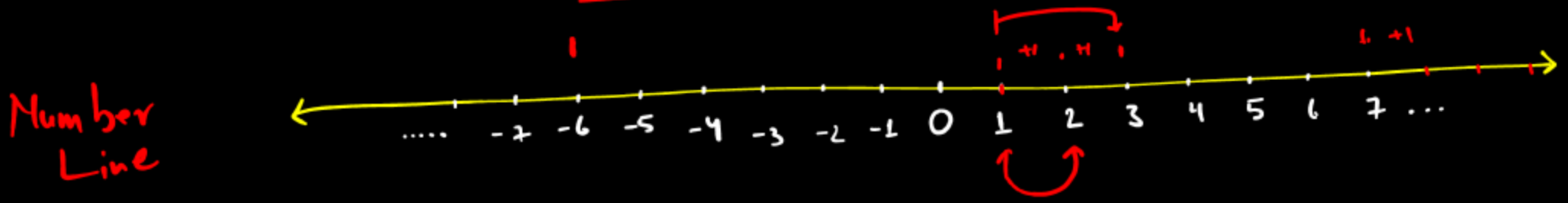
=> Neutral

Integers

When we represent these integers on a line, then that line is called a number line

(-6) + (3) =

Subtraction ← | → Addition



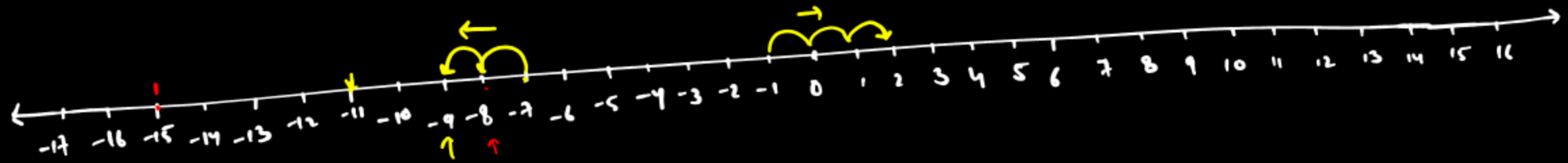
1 + 2 =

7 + 7 = 14

Direction of addition

Number Line

Direction of subtraction



$-1 + 3 = 2$

$-7 - 2 = -9$

$-5 - 6 = -11$

$-15 + 7 = -8$

Addition and subtraction of integers

DMAS

(i) $100 - 150 + 10 =$

$\Rightarrow 100 + 10 - 150$

$\Rightarrow 110 - 150$

$\Rightarrow -40$

(ii) $240 - 60 + 10 - 200 + 15 - 20$

$\Rightarrow 240 + 15 + 10 - 200 - 60 - 20$

$\Rightarrow 265 - 200 - 60 - 20$

$\Rightarrow 65 - 60 - 20$

$\Rightarrow 5 - 20$

$\Rightarrow -15$

Multiply :→

⇒ $(-) \times (-) = (+)$

$(+) \times (-) = (-)$

Ex $13 \times (-4) = -(13 \times 4)$

$= -52$

$(-4) \times (-2) = +(4 \times 2) = +8 = 8$

$(-15) \times 2 = -(15 \times 2)$

$= -30$

$(-4) \times (-6) =$

Multiplication of Same sign ⇒ positive product

Multiplication of different sign ⇒ negative product.

$2 \times (-3) = -6$

$\Rightarrow 4 \times 3 = 12$

$-4 \times 3 = -12$

$\Rightarrow -4 \times -3 = 12$

$5 \times -2 = -10$

$-16 \times 2 = -32$

$-5 \times -5 = 25$

Adding integers with same sign.

positive + positive = positive

negative + negative = negative no.

Subtract

positive + negative = Sign of larger no.

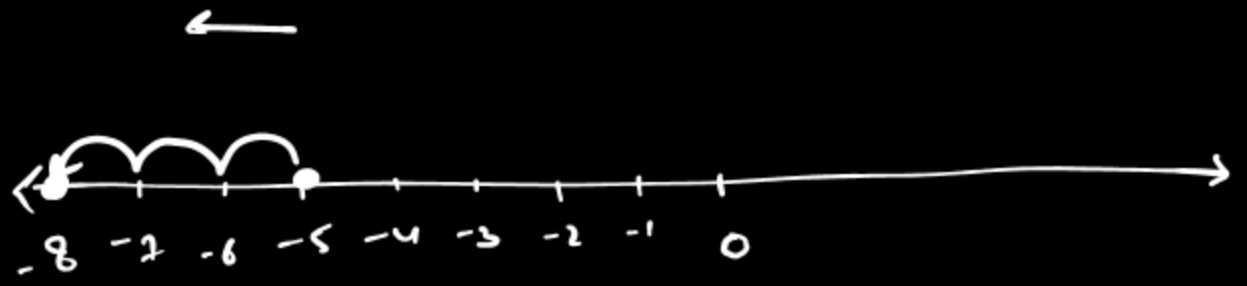
$$5 + (-3) = 5 - 3$$

$$= 2$$

- Like sign || → Addition → depends on the sign of the number.
- Unlike sign → Subtraction → sign of larger number.

Like signs (add)

eg $(-5) - 3 = -8$



(ii) $-11 - 13 = -24$

(iii) $-13 - 10 - 56 = -79$

Unlike signs (subtraction)

(i) $-13 + 4 = -9$ (sign of bigger no.)

(ii) $-15 + 17 = 2$ (sign of bigger no.)

(iii) $-23 + 14 = -9$

(iv) $-63 + 20 - 11 = -43 - 11 = -54$

Simplify :

(i) $23 + 29 - 70 = 52 - 70$

$= -18$

~~(ii)~~

Multiplication :

(•) negative × negative = positive

(•) negative × positive = negative.

Eg: (i) $-2 \times (-6) = 12$

(ii) $-2 \times 6 = -12$

(iii) $2 \times (-6) = -12$

(iv) $-3 \times -7 - 15 =$

$= 21 - 15$

$= 6$

(v) $-3 \times -2 + 4 \div 2$

$\Rightarrow -3 \times -2 + 2$

$\Rightarrow 6 + 2$

$\Rightarrow 8$ //

Simplify :→

(i) $-4+6-2(-3)+12\div 6$

$\Rightarrow -4+6-2(-3)+2$

$\Rightarrow -4+6+6+2$

$\Rightarrow 6+6+2-4$

$\Rightarrow 14-4$

$\Rightarrow 10$

DMAS

$2(5)=10$

$-2(5)=-10$

$-2(-5)=10$

(ii) $-9 + 10 - 13 - 42 + 20$

$\Rightarrow 10 + 20 - 9 - 13 - 42$

$\Rightarrow 30 - 22 - 42$

$\Rightarrow 30 - 64$

$\Rightarrow -34$,

3.562 2.320 13.910

Addition of decimal numbers

Example 1: Add 8.76 and 9.58

```
 1 1
 8.76
 9.58
-----
18.34
```

2: Add 6.040, 13.500, 2.687 and 108.960

"Add this"

```
  6.040
 13.500
  2.687
108.960
-------
131.187
```

Subtraction of Decimal numbers

① Subtract 28.38 from 42.96

$$\begin{array}{r} 42.96 \\ -\ 28.38 \\ \hline 14.58 \end{array}$$

14.58

4. Subtract 12.85 from 72.40

$$\begin{array}{r} 72.40 \\ -\ 12.85 \\ \hline 59.55 \end{array}$$

Simplify : $37.9 - 18.3 + 113.42 - 46.58$

$\Rightarrow (37.9 + 113.42) (-18.3 - 46.58)$

$\Rightarrow 151.32 -$

$$\begin{array}{r} {\scriptstyle 1\ 1} \\ 37.90 \\ +113.42 \\ \hline 151.32 \end{array}$$

$-2 - 3 = -5$

$$\begin{array}{r} -18.30 \\ -14.58 \end{array} \quad \text{Add}$$

Subtract 13.57 from 11.23

$11.23 - 13.57 = -2.34$

$$\begin{array}{r} -13.57 \\ 11.23 \\ \hline -2.34 \end{array}$$

Subtract 13 from 11.

$11 - 13 = -2$

Simplify:

$66.66 - 6.666 - 3.033$

$\Rightarrow \quad 59.994 - 3.033$

$\Rightarrow \quad 56.961$

$-6 - 3 =$

$6 - 3 = 3$

$-6 + 3 = -3$

$-6 - 3 = 9$

$$\begin{array}{r} 66.660 \\ 6.666 \\ \hline 59.994 \end{array}$$

$+ + = +$

$- - = -$

$+ - =$ subtract.

$$\begin{array}{r} 59.994 \\ - \ 3.033 \\ \hline \end{array}$$

Simplify : $500 - 37.8 + 1.4 - 137.63$

337.78

$\Rightarrow 501.4 - 37.8 - 137.63$

$\Rightarrow 463.6 - 137.63$

$\Rightarrow 325.97$

501.4
37.8
463.60
137.63

Q Find the difference between 1000 and 136.325.

136 = 100

973.675

$$\begin{array}{r} 1000.000 \\ -\ 136.325 \\ \hline 863.675 \end{array}$$

Q. $301 - 37.6$

263.4

Evaluate: $4.8 - 2.9 + 1.7 - 0.9$

Find the value

$\Rightarrow 4.8 + 1.7 - 2.9 - 0.9$

$\Rightarrow 6.5 - 2.9 - 0.9$

$\Rightarrow 6.5 - 3.8$

$\Rightarrow 2.7$

$$\begin{array}{r} {\scriptstyle 1} \\ 4.8 \\ 1.7 \\ \hline 6.5 \end{array}$$

$-2.9 - 0.9 = -$

$$\begin{array}{r} {\scriptstyle 1} \\ -2.9 \\ -0.9 \\ \hline -3.8 \end{array}$$

Evaluate $2.9 - 1.3 + 18.6 - 7.23$

$\Rightarrow 2.9 + 18.6 - 1.3 - 7.23$

$\Rightarrow 21.5 - 1.3 - 7.23$

$\Rightarrow 21.5 - 8.53$

$\Rightarrow 12.97$

$$\begin{array}{r} {\scriptstyle 1} \\ 2.9 \\ 18.6 \\ \hline 21.5 \end{array}$$

20.15

$$\begin{array}{r} 21.50 \\ -\ 8.53 \\ \hline 12.97 \end{array}$$

$$\begin{array}{r} 6.5 \\ -\ 3.8 \\ \hline 2.7 \end{array}$$

Evaluate $17.23 - 4.8 - 12.36 + 21.07$

Ans: 21.14

21.09 x

3 min 19 sec

$$\begin{array}{r} 21.07 \\ +\ 17.23 \\ \hline 0 \end{array}$$

~~Solve~~ Subtract 78.39 from 100

21.61

$129.3 - 73.89$

55.41

$178.1 - 96.23$

81.87

Subtract 486.235 from 900.2

413.965

Q. What should be subtracted from 138.01 to get 98.5?

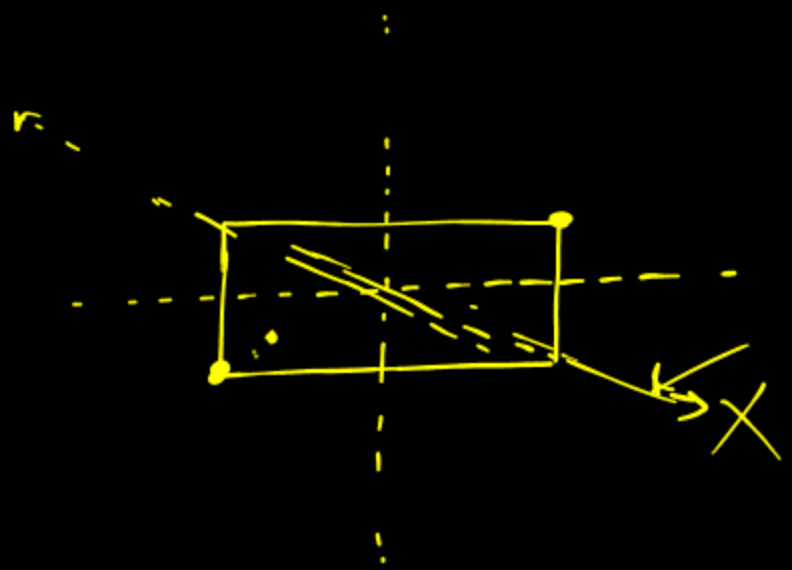
$$138.01 - 98.5$$

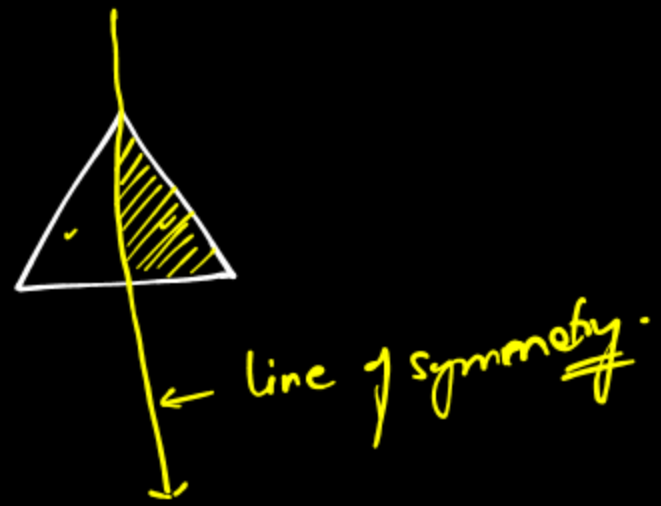
$$\begin{array}{r} 138.01 \\ -\ 98.50 \\ \hline 39.51 \end{array}$$

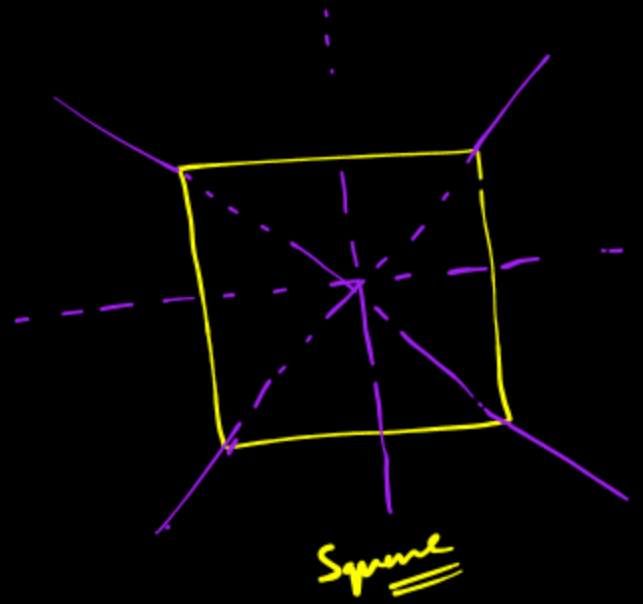
$50 - 27.5$

22.5

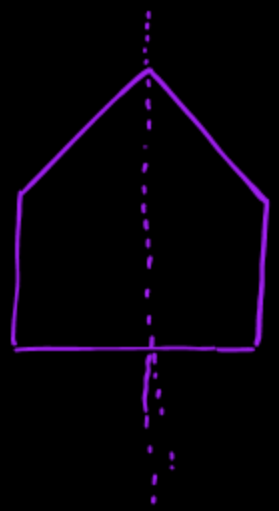
Symmetry

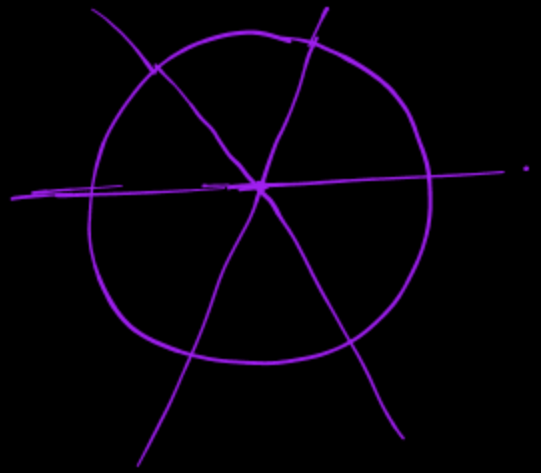




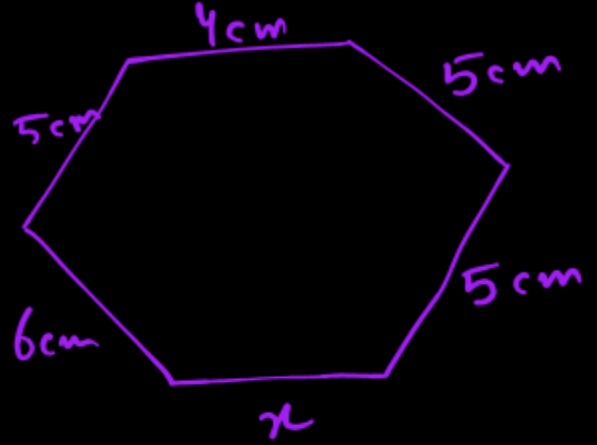


Square





If the perimeter of the given figure is 30 cm, then find the value of x.

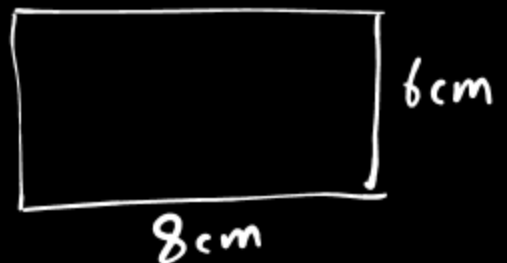


(A) 8 cm

(B) 5cm ✓

(C) 7cm

(D) 6cm



Area = $l \times b$

$= 6\text{cm} \times 8\text{cm}$

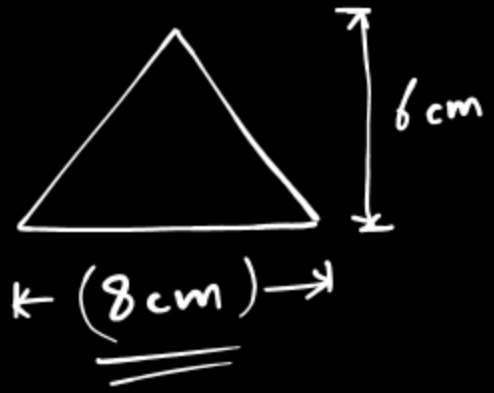
$= 48\ (\text{cm} \times \text{cm}) = \text{cm}^2$

$= 48\ \text{cm}^2$

$= 48$ sq. cm

Area of triangle $= \frac{1}{2} \times \text{base} \times \text{height}$.

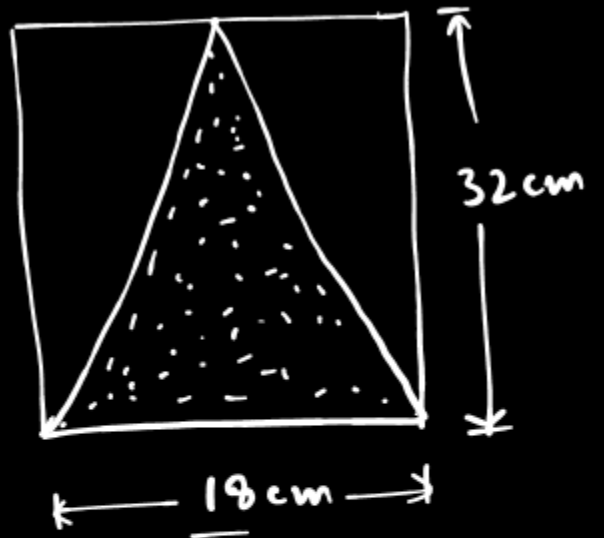
$=$



Area of triangle $= \frac{1}{\cancel{2}} \times \cancel{8}^{4}\text{cm} \times 6\text{cm}$

$= 4\text{cm} \times 6\text{cm} = 24\ \text{cm}^2$

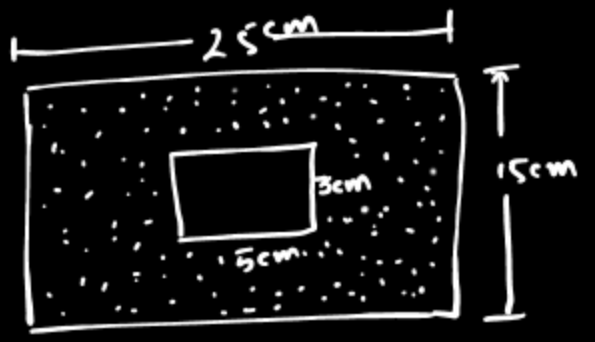
Find the area of shaded region. = 288 cm²



Area of unshaded = Area of rectangle - Area of triangle

= 18 × 32 − 288

= 288

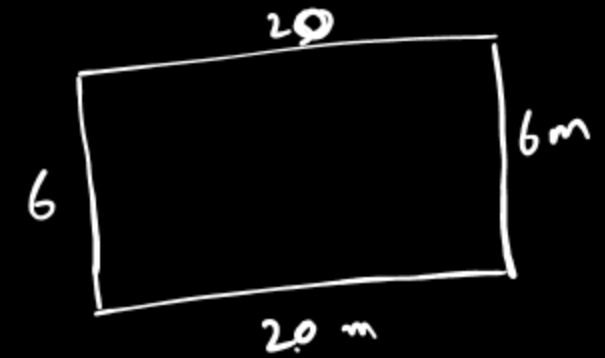


Area of shaded portion = Area of big rectangle − Area of small rectangle

$= 25 \times 15\ cm^2 - \underline{5 \times 3}\ cm^2$

$= 375\ cm^2 - 15\ cm^2$

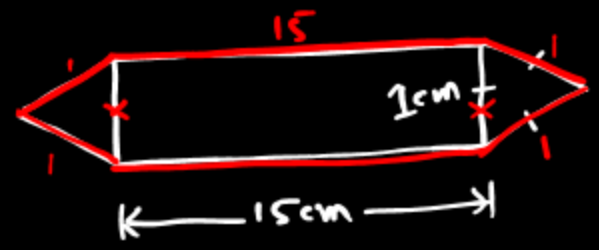
$= \underline{360\ cm^2}$



Perimeter = 20 + 20 + 6 + 6 = 52

Perimeter of rectangle = 2 (l + b)

= 2 (26) = 52



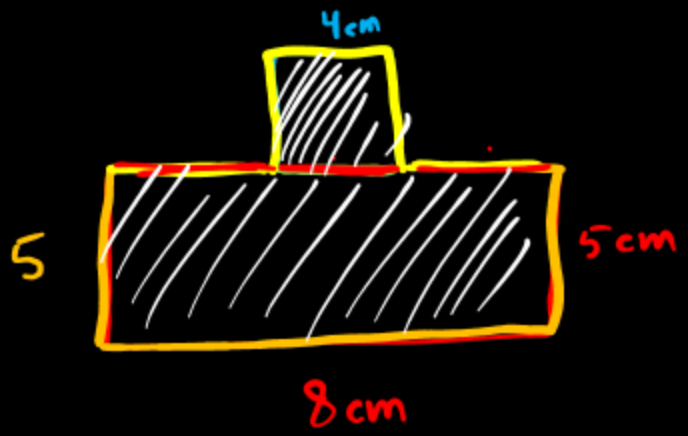
Find the perimeter of given shape

$= 15+15+1+1+1+1$

$= 34\ cm.$

Find perimeter of combined shaped?

34 ✓



Find the combined area?

= area of rectangle + area of sq.

= (5 x 8) + (4 x 4)

= 40 + 16

= 56

Converting Decimals into fractions

G. Convert **0.7** into **fraction**.

Step1: $\frac{7}{10}$

$0.7 = \frac{7}{10}$

Step1: Write down the number without decimal as numerator.

Step2:  on denominator → write 1 followed by as many zeros as there are decimal places in the given number.

Step3: Simplify the fraction if possible.

(i) 0.82 into fractions.

$$\frac{\cancel{82}^{41}}{\cancel{100}_{50}} = \frac{41}{50}$$

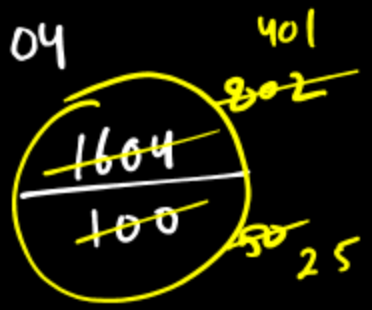
(ii) 0.258 into fraction.

$$\frac{\overset{129}{\cancel{258}}}{\underset{500}{\cancel{1000}}} = \frac{129}{500}$$

(iii) 23.7

$$\frac{237}{10} = \frac{237}{10} = 23\frac{7}{10}$$

(iv) 16.04



$$\frac{401}{25} \Rightarrow \boxed{16\frac{1}{25}}$$

$$16\frac{4}{100}\,{}^{1}_{25} = \boxed{16\frac{1}{25}}$$

(v) 0.003

$$\frac{0003}{1000} = \frac{3}{1000}$$

(vi) 3.005

$$\frac{3005}{1000} = 3\frac{5}{1000} = 3\frac{1}{200}$$

(vii) 8.254

$$8\frac{254}{1000} = 8\frac{127}{500}$$

$$\Rightarrow 8\frac{127}{500}$$

(viii) $0.040 = \frac{1}{25}$

Simplify $4\frac{1}{3} - 2\frac{3}{4} + 5\frac{1}{6}$

2 mins.

$\frac{81}{12} = 6\frac{9}{12} = 6\frac{3}{4}$

$\frac{27}{4}$

(i) 0.0093

$\frac{93}{10000}$

$= \frac{93}{10000}$

(ii) 1.05

$\frac{105}{100}$

$1\frac{1}{20}$

Converting Fractions into Decimals

Power of 10's = $10 = 10$

$10 \times 10 = 100$

$10 \times 10 \times 10 = 1000$ =

$10 \times 10 \times 10 \times 10 = 10000$ $\frac{9}{10}$ =

$\frac{9}{10} = 0.9$

$\frac{12}{10} = 1.2$

$\frac{13}{100} = 0.13$

$\frac{13}{1000} = 0.013$

$\frac{213495}{10000} = 21.3495$

$\frac{3}{4}$ = ? into decimal

$\frac{3}{4} = \frac{3 \times 25}{4 \times 25} = \frac{75}{100} = 0.75$

$\frac{3}{4} = 0.75$

Convert the given fractions into decimals.

(i) $\frac{3}{2}$

$$\frac{3 \times 5}{2 \times 5} = \frac{15}{10} = 1.5$$

$\boxed{\frac{3}{2} = 1.5}$ Ans.

Division method:

$\frac{3}{2} = 2 \overline{)\,3.0}$, quotient 1.5

-2

10

-10

0

$\boxed{\frac{3}{2} = 1.5}$ ✓

(ii) $\frac{5}{8} =$ H.W.

(iii) $\frac{15}{4} =$ H.W.

22nd Nov.

(i) $\frac{5492}{1000} = 5.492$

(ii) $\frac{10009}{100} = 100.09$

(iii) $\frac{5}{4} =$

→ Convert denominator in power of 10 by multiplying it with suitable number. Multiply the numerator also with the same number.

(iii) $\frac{5}{4} \times \frac{25}{25} = \frac{125}{100}$

$\frac{5}{4} = \frac{125}{100} = 1.25$

10, 100, 1000, ..

R.W.

25
x 5

(iv) $\frac{129}{4}$.

$$\frac{129 \times 25}{4 \times 25} = \frac{3225}{100} = 32.25$$

(v) $\frac{5 \times 125}{8 \times 125} = \frac{625}{1000} = 0.625$

$4 \times 25 = 1000$

4×2

10, 100, 1000, 10000

(vi) $\frac{15}{4} \times \frac{25}{25} = \frac{375}{100} = 3.75$

Division Method

Q. Convert $\frac{15}{4}$ into decimal no. using division method.

$\frac{15}{4}$ → 15 → Dividend, 4 → Divisor =

3.75

4) 15.00 (

−12 ↓

30

−28

20

−20

0

Q. Convert $\frac{51}{8}$ into decimal. (Division method)

$8 \overline{)51}$

$6.375 = \frac{51}{8}$

Q. Convert $8\frac{1}{25}$ into decimal.

$8\frac{1}{25} = \frac{201}{25} = 8.04$

$8\frac{1}{25} = 8 + \frac{1}{25} = 8 + 0.04 = 8.04$

$25 \overline{)201}$

$\frac{1}{25} = \frac{1 \times 4}{25 \times 4} = \frac{4}{100} = 0.04$

Q. $18\frac{3}{5} = 18.6$

$18\frac{3}{5} = \frac{(18\times5)+3}{5} = \frac{93}{5}$

$$\begin{array}{r} 1 \\ 5\overline{)\,9\;3.0} \\ -5 \\ \hline \end{array}$$

$\frac{3}{5} \xrightarrow{\times 2 \atop \times 2} \frac{6}{10} = 0.6$

10, 100, 1000.

Q. $\frac{15}{16}$ => Decimals

$\frac{15}{16} = 0.93875$

$\boxed{\frac{15}{16} = 0.9375}$

$16 \overline{)15.0000}$ $0.$

Q. $\frac{7}{8} = 0.875$ ✓

Q. $\frac{1}{4} = 0.25$.

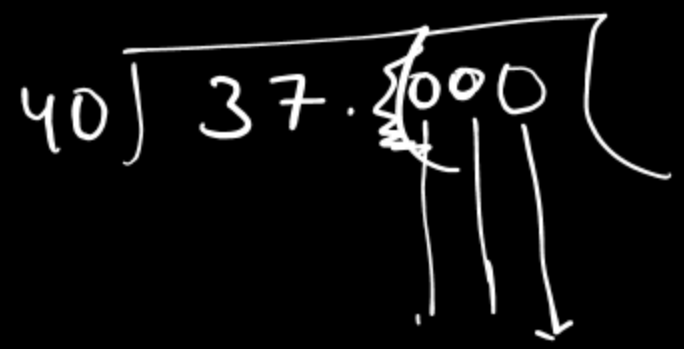
$$6\frac{3}{20} = 6 + \frac{3}{20}$$

$$\frac{3}{20} = \frac{3 \times 5}{20 \times 5} = \frac{15}{100} = 0.15$$

$$6\frac{3}{20} = 6 + 0.15$$

$$= 6.15$$

$$\frac{37}{40} = 0.925$$



Multiplication of decimal by a whole number.

Ex. 2.6×14

$$
\begin{array}{r}
{}^{2}26 \\
\times\ 14 \\
\hline
104 \\
260 \\
\hline
36.4
\end{array}
\quad \leftarrow \text{Product}
$$

Number of decimal places in product is the same as in the given decimal.

(11) 3.42×16

$$
\begin{array}{r}
342 \\
\times \quad 16 \\
\hline
2052 \\
3420 \\
\hline
64.72 \\
\hline
\end{array}
$$

(iii) Multiply 3.417 by 8.

27.336

(iv) Multiply 2.376 by 134.

318.384

Multiply decimals by 10, 100, 1000, ...

(i) $16.342 \times 10 = 163.42$

(ii) $13.4972 \times 1000 = 13497.2$

(Decimal is moved to 3 digits right side)

(iii) $24.82 \times 20 =$

$24.82 \times 10 \times 2 = 248.2 \times 2 = 496.4$

(iv) $1.900 \times 1000 = 1900.0 = 1900$

$$\begin{array}{r} 19 \\ \times\ 1000 \\ \hline 19000 \end{array}$$

(v) $18.354 \times 100 = 1835.4$

(vi) $18.354 \times 200 = \underline{18.354 \times 100} \times 2$

$= 1835.4 \times 2$

$= 3670.8$

Multiplication of two Decimals.

(i) 3.21×1.6

$$\begin{array}{r} 321 \\ \times\ 16 \\ \hline \\ \hline \\ \hline \end{array}$$

H.W

0.731

0.027

2.34 x 4.89

2.34
x 4.89

1

11.4426

Multiply 34.5 by 0.37

$$\begin{array}{r} 345 \\ \times \quad 37 \\ \hline 12.765 \\ \hline \end{array}$$

Q. One kilogram of potato costs ₹ 4.60. How much will 3.5 kg cost?

Cost of 1 kg potato → ₹ 4.60

Cost of 3.5 kg potato → ₹ (3.5 × 4.60)

⇒ ₹ (3.5 × 4.6)

$$\begin{array}{r} 35 \\ \times\ 46 \\ \hline 16.10 \end{array}$$

Q. Monthly salary of Mr. Nadir is ₹ 6723.5 and his monthly expenditure is ₹ 3854.75. How much does he saves in one year?

Monthly salary = ₹ 6723.5

Annual salary = ₹ 12 × 6723.5 = ₹ 80682.0

Monthly expenditure = ₹ 3854.75

Annual expenditure = ₹ 12 × 3854.75 = ₹ 46257.00

Savings in one year = Annual salary − Annual expenditure.

= ₹ 80682.0 − ₹ 46257.00

$$\begin{array}{r} 80682.00 \\ -\ 46257.00 \\ \hline 5.00 \end{array} = ₹\ 34425.00$$

$$
\begin{array}{r}
67235 \\
\times \quad 12 \\
\hline
\rightarrow \quad 134470 \\
+ \quad 67235\underline{0} \\
\hline
\quad 20
\end{array}
$$

Q. Amit weighs 50.84 kg. His father is 1.5 times heavier than he is. Calculate father's weight.

Weight of Amit = 50.84 kg.

Weight of father = (50.84 × 1.5) kg

= 76.26 kg.