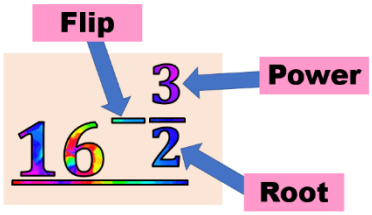
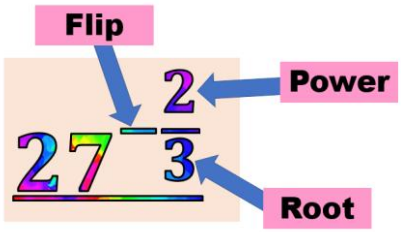
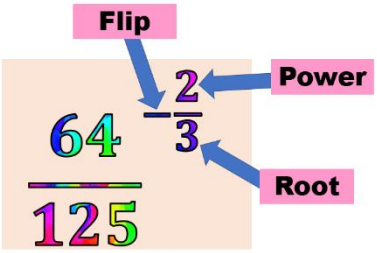
Maths Revision Pack

Year 10 Higher

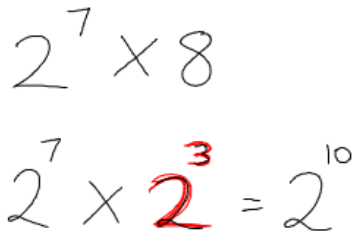
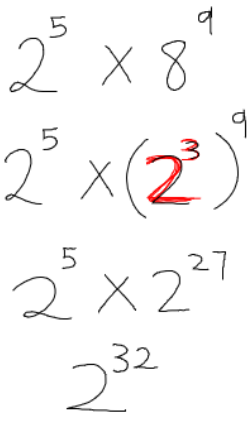
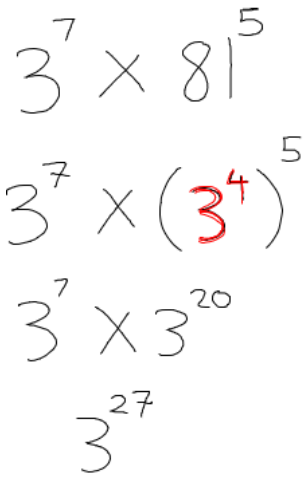
Assessment Week 1

Name: _____

Example 1	Example 2	Example 3
		
Step 1 : $\sqrt{16} = 4$ Step 2 : $4^3 = 64$ Step 3 : $\frac{1}{64}$	Step 1 : $\sqrt[3]{27} = 3$ Step 2 : $3^2 = 9$ Step 3 : $\frac{1}{9}$	Step 1 : $\sqrt[3]{\frac{27}{125}} = \frac{3}{5}$ Step 2 : $(\frac{3}{5})^2 = \frac{9}{25}$ Step 3 : $\frac{25}{9} = 2\frac{7}{9}$

Questions

2^3	3^{-3}	$25^{\frac{1}{2}}$
$25^{-\frac{1}{2}}$	$36^{\frac{1}{2}}$	$27^{\frac{1}{3}}$
$27^{-\frac{1}{3}}$	$64^{\frac{3}{2}}$	$64^{\frac{2}{3}}$
$125^{-\frac{2}{3}}$	$(\frac{16}{81})^{\frac{1}{2}}$	$(\frac{8}{27})^{-\frac{1}{3}}$
$(\frac{49}{121})^{\frac{3}{2}}$	$(\frac{9}{144})^{-\frac{3}{2}}$	$(\frac{1}{125})^{-\frac{2}{3}}$

Example 1	**Example 2**	**Example 3**
Write down $2^7 X\ 8$ *as a single power of* 2. 	Write down $2^5 X\ 8^9$ *as a single power of* 2. 	Write down $3^7 X\ 81^5$ *as a single power of* 3. 

Questions

Write these as single a single power

$2^4 X\ 16$	$2^9 X\ 32$	$3^5 X\ 27$
$2^5 X\ 8^7$	$2^5 X\ 16^3$	$3^2 X\ 9^5$
$2^4 X\ 8^3$	$4^5 X\ 16^9$	$4^2 X\ 64^6$
$5^2 X\ 25^2$	$5^6 X\ 125^4$	$16^3 X\ 64^6$
$25^2 X\ 125^2$	$9^5 X\ 27^2$	$27^2 X\ 81^6$

Example 1

$(2x^5y^7)^3$

$2x^5y^7 \times 2x^5y^7 \times 2x^5y^7$

$8x^{15}y^{21}$

Example 2

$(5a^4b^8)^3$

$5a^4b^8 \times 5a^4b^8 \times 5a^4b^8$

Questions

$(6x^4y^7)^2$	$(5x^8y^3)^2$
$(3a^3b^5)^2$	$(7x^3y^9)^2$
$(3x^4y^6)^3$	$(4a^5b^2)^3$

Example 1

$9^0 = 1$

$7^2 = 49$

$9^0 \times 7^2$

1 x 49 = 49

Example 2

$b^0 = 1$

$8^1 = 8$

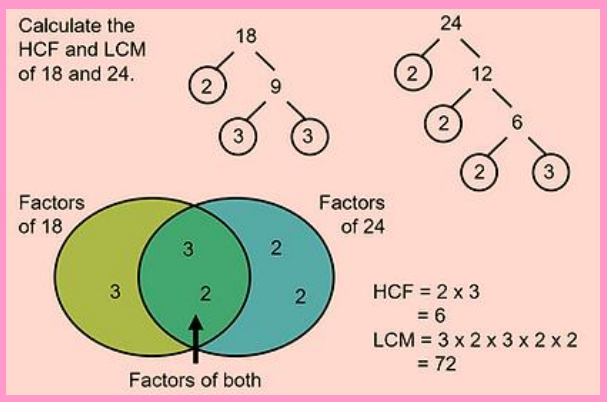
$b^0 + 8^1$

1 + 8 = 9

Questions

$8^1 + 7^0$	$3^2 \times a^0$
$13^0 + 6^2$	$15^1 - 35^0$

Example

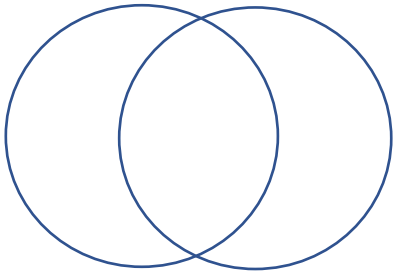


$18 = 2 \times 3 \times 3$

$24 = 2 \times 2 \times 2 \times 3$

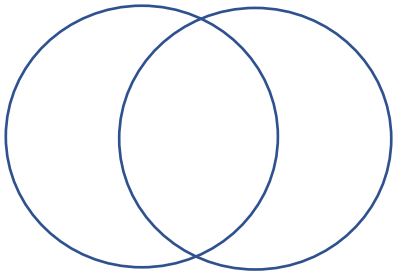
Questions

Find the HCF and LCM of 54 and 36.



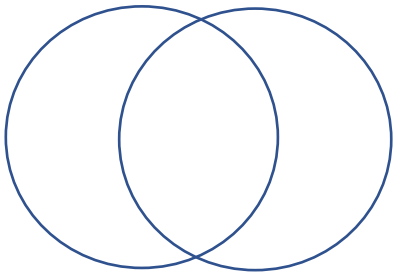
HCF =
LCM =

Find the HCF and LCM of 120 and 220.

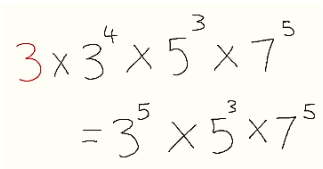
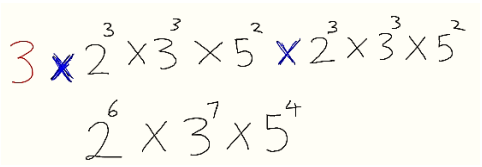
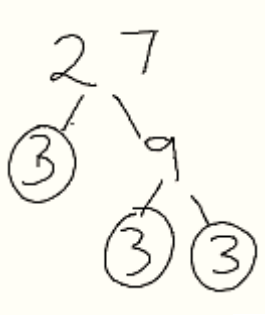
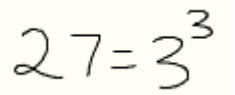
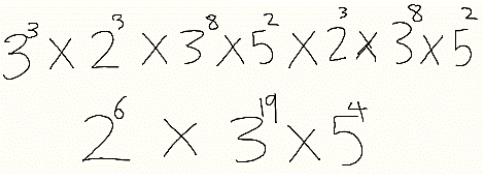


HCF =
LCM =

Find the HCF and LCM of 240 and 180.



HCF =
LCM =

Example 1	**Example 2**	**Example 3**
$N=3^4 \times 5^3 \times 7^5$ What is 3N?  	$N=2^3 \times 3^3 \times 5^2$ What is $3N^2$?  	$N=2^3 \times 3^8 \times 5^2$ What is $27N^2$?   
Questions		
$N=2^4 \times 5^3 \times 7^5$ What is 5N?	$N=2^3 \times 3^3 \times 5^2$ What is $2N^2$?	$N=2^3 \times 3^8 \times 5^2$ What is $24N^2$?
$N=3^4 \times 5^3 \times 7^5$ What is 2N?	$N=2^9 \times 3^3 \times 7^2$ What is $3N^2$?	$N=2^3 \times 3^7 \times 5^2$ What is $18N^2$?
$N=2^7 \times 3^8 \times 5^3 \times 7^5$ What is 7N?	$N=2^5 \times 3^8 \times 5^3 \times 7^5$ What is $5N^2$?	$N=2^4 \times 3^8 \times 5^2$ What is $125N^2$?

Example 1

SOLVE FOR X:

$15 + 6x = 45 + 8x$

$15 + 6x = 45 + 8x$

$-6x \quad -6x$

$15 = 45 + 2x$

$-45 \quad -45$

$\frac{-30}{2} = \frac{2x}{2}$

$-15 = x$

Check your answer:

$15 + 6(-15) \stackrel{?}{=} 45 + 8(-15)$

$15 + (-90) \stackrel{?}{=} 45 + (-120)$

$-75 = -75$ ✓

Example 2

$\frac{2x}{5} = 3$ ← Add a one underneath to make it a fraction

$\frac{2x}{5} = \frac{3}{1}$ ← Fraction=fraction Use scissors

$2x(1) = 3(5)$

$\frac{2x}{2} = \frac{15}{2}$

$x = 15/2 = 7\frac{1}{2}$

Example 3

$\frac{3w+4}{5} = \frac{2}{7}$ ← Fraction=fraction Use scissors

$7(3w+4) = 5(2)$

$21w + 28 = 10$

$(-28) \quad (-28)$

$\frac{21w}{21} = \frac{-18}{21}$

$w = -18/21$

Example 4

Fractions Both Sides Equation

Solve the Equation : $\frac{8h + 7}{2} = 3h - 4$

1a. Cross Multiply : $\frac{8h + 7}{2} = \frac{3h - 4}{1}$

1b. Use Brackets : $1\,(8h + 7) = 2\,(3h - 4)$

1c. Expand Out : $8h + 7 = 6h - 8$

Now solve as letter both sides

Questions

Solve these equations

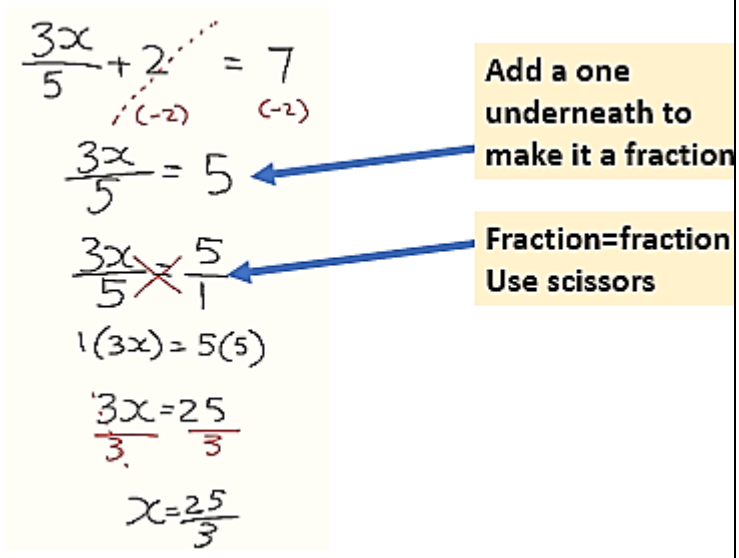
$\frac{x}{4} = 8$

$\frac{2a}{3} = 8$

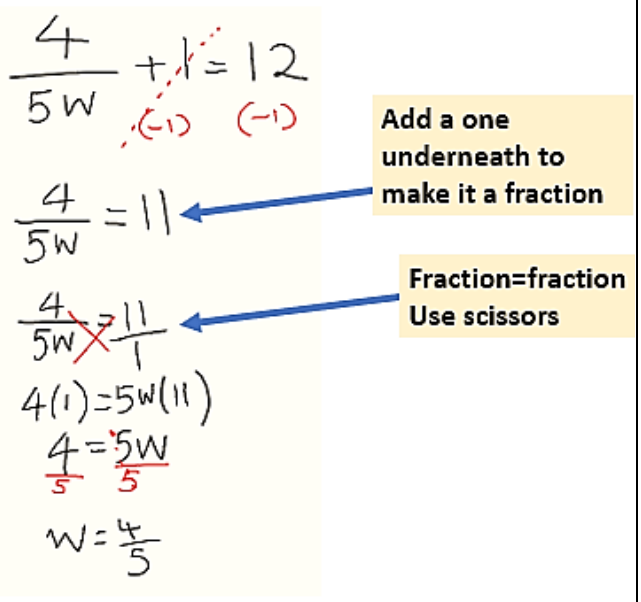
$\frac{10x - 1}{7} = 8$

$\frac{7c + 4}{8} = 11$	$\frac{53 - 2x}{5} = 7$	$\frac{11 - w}{5} = 3 + w$
$\frac{9(4x - 1)}{2x} = 15$	$\frac{x}{2x - 1} = 5$	$\frac{2(3x-6)}{5}=\frac{3x}{2}$
$\frac{x+15}{3} = 2(x + 10)$	$\frac{5x}{5}=3x - 8$	$2(5 - 6x)=\frac{3x}{2}$

Example 1



Example 2



Solve these equations

$\frac{x}{2} + 1 = 3$

$\frac{a}{3} + 4 = 9$

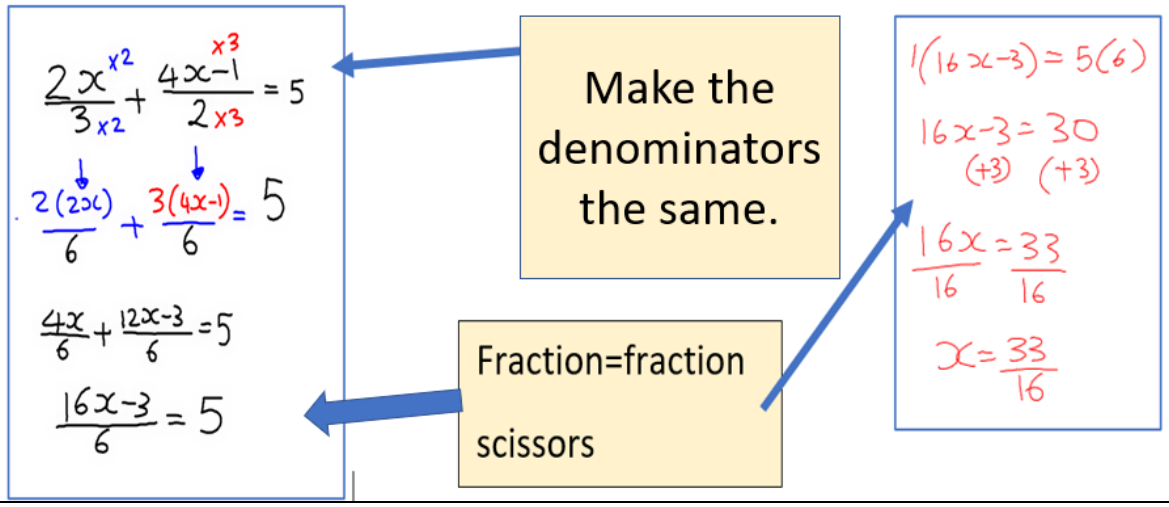
$\frac{2r}{5} - 3 = 2$

$\frac{3}{c} + 8 = 2$

$\frac{3x}{4} + 1 = 12$

$\frac{4}{p} + 3 = 5$

Example 1



Solve these equations

$\frac{x+5}{3} + \frac{x+1}{2} = 8$

$\frac{2x-1}{4} + \frac{x-3}{5} = 3$

$\frac{x+5}{10} - \frac{x+4}{2} = 1$

$\frac{x-3}{4} - \frac{x-8}{3} = 4$

Examples

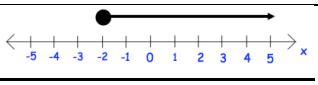
● Includes the number

○ Does not Include the

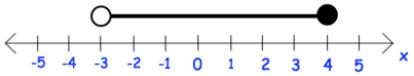
< or > ○

≤ or ≥ ●

x is more than − 5



x is more than or equal to − 2



x is more than
− 3 but less than or equal to 4

x is less than − 3

Solve:

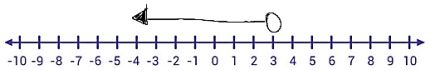
$$5x + 3 < 15$$

$5x+3<18$ (−3) (−3)

$\frac{5x}{5} < \frac{15}{5}$

$x < 3$

x is less than 3



2,1,0,-1,-2……..

Solve:

$$4(2x - 3) \geq 28$$

$4(2x-3) \geq 28$

$8x - 12 \geq 28$ (+12) (+12)

$\frac{8x}{8} \geq \frac{40}{8}$

$x \geq 5$

x is more than or equal to than 3

5,6,7,8,9,10,11……..

$$\frac{8x - 4}{3} \geq 4$$

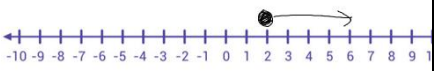
$\frac{8x-4}{3} \geq \frac{4}{1}$

$1(8x-4) \geq 3(4)$

$8x - 4 \geq 12$ (+4) (+4)

$\frac{8x}{8} \geq \frac{16}{8}$

$x \geq 2$



2,3,4,5,6,7,8……..

$$\frac{8x}{3} - 4 < 4$$

$\frac{8x}{3} - 4 < 4$ (+4) (+4)

$\frac{8x}{3} < 8$

$\frac{8x}{3} < \frac{8}{1}$

$1(8x) < 3(8)$

$\frac{8x}{8} < \frac{24}{8}$

$x < 3$

2,1,0,-1,-2……..

Solve:

$$5x + 3 \leq 2x + 33$$

$5x + 3 \leq 2x + 33$ (−2x) (−2x)

$3x + 3 \leq 33$ (−3) (−3)

$\frac{3x}{3} \leq \frac{30}{3}$

$x \leq 10$

10,9,8,7,6,5,4……..

Solve:

$$-12 \leq 5x + 3 < 33$$

$-12 \leq 5x+3 < 33$ (−3) (−3) (−3)

$\frac{-15}{5} \leq \frac{5x}{5} < \frac{30}{5}$

$-3 \leq x < 6$

x is more than or equal to
− 3 but lesst than 6

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

Questions

Solve these inequalities, draw a number line and write down the integers that satisfy the inequalities.

$2x + 1 \leq 9$	$3x - 5 > 16$	$4(2x + 1) > 9$
$5x - 2 \geq 68$	$4x \leq x + 6$	$\frac{x}{9} - 6 > 4$
$\frac{x}{2} + 1 \leq 5$	$\frac{x+3}{2} \geq 5$	$\frac{x-5}{4} > 2$

$\frac{x+18}{4} \leq 5$	$4x + 6 \leq x + 21$
$9x + 4 > 7x + 15$	$4x - 4 \leq 7x - 19$
$5 < 2y < 12$	$4 \leq 2x \leq 8$
$-3 \leq x + 2 < 2$	$1 \leq 2y - 3 < 9$
$16 \leq 5x + 1 < 31$	$7 < 2y - 3 \leq 25$

Example1

$y = 2x + 1$

x	-1	0	1	2	3
y	-1	1	3	5	7

2(3) + 1=**7**

2(2) + 1=**5**

2(1) + 1=**3**

2(0) + 1=**1**

2(-1) + 1=**-1**

Example2

$x + 2y = -2$

x	-1	0	1	2	3
y	-0.5	-1	-1.5	-2	-2.5

$-1-\frac{1}{2}(3)$= **-2.5**

$-1-\frac{1}{2}(2)$= **-2**

$-1-\frac{1}{2}(1)$= **-1.5**

$-1-\frac{1}{2}(0)$=**-1**

$-1-\frac{1}{2}(-1)$=**-0.5**

Re-arrange to make y the subject

$x + 2y = -2$

$(-x)$ $(-x)$

$\frac{2y}{2} = \frac{-2-x}{2}$

$y = -1 - \frac{1}{2}x$

Questions

$y = 3x - 1$

x	-1	0	1	2	3
y	-4			5	

$y = 4x - 2$

x	-2	-1	0	1	2	3
y						

$y = \frac{1}{2}x + 1$

x	-2	-1	0	1	2	3	4
y							

$2x + y = 4$

x	-1	0	1	2	3
y					

Example1

Gradients from two points

Find the gradient of the line passing through (2,5) and (6,13)

TSD
- Two coordinates
- Subtract
- Divide

Find the gradient of the line passing through (2,5) and (6,13)

6, 13
− 2, 5
4, 8

$\frac{y}{x} = \frac{8}{4} = 2$

Gradient = 2

Example2

Gradients from two points

Find the gradient of the line passing through (-2,9) and (-4,7)

TSD
- Two coordinates
- Subtract
- Divide

Find the gradient of the line passing through (-2,9) and (-4,7)

$-2 - -4 = 2$

−2, 9
−4, 7
2, 2

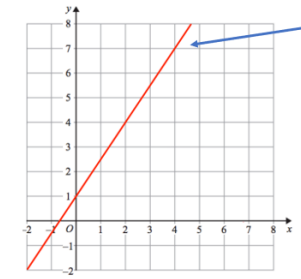
$\frac{y}{x} = \frac{2}{2} = 1$

Gradient = 1

Questions

(1, 4) and (3, 10)	(0, 0) and (3, 12)
(5, −2) and (9, 14)	(−5, −9) and (1, 3)
(−7, −2) and (1, −4)	(−2, 1) and (8, −7)

Example

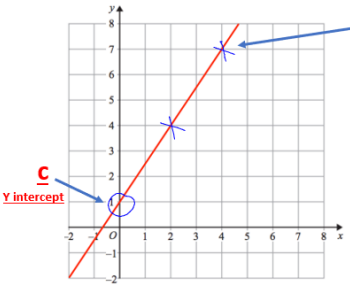


Straight line

Y = mx + c

Gradient

TSD: Two coordinates, Subtract, Divide



TSD: Two coordinates, Subtract, Divide

4,7 − 2,4 = 2,3

$\frac{y}{x} = \frac{3}{2}$

c

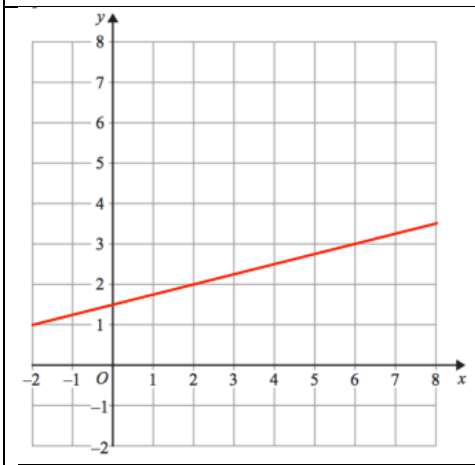
Y intercept

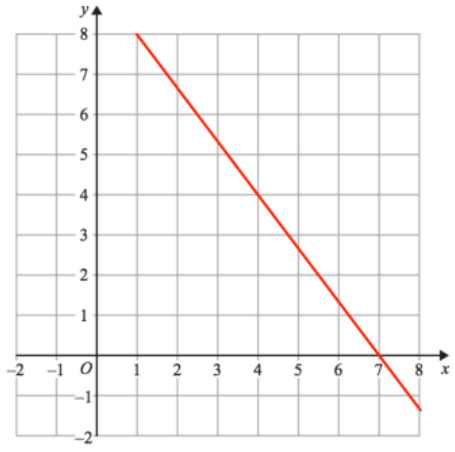
Gradient (m) = $\frac{3}{2}$

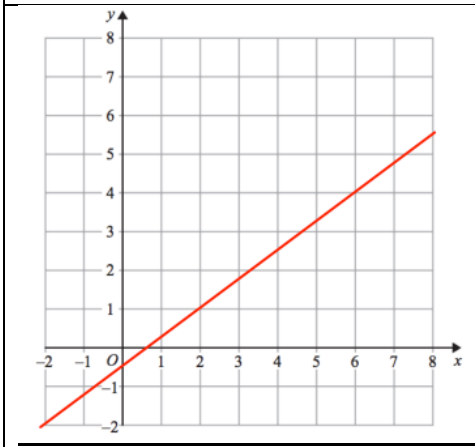
Y-intercept (c) = 1

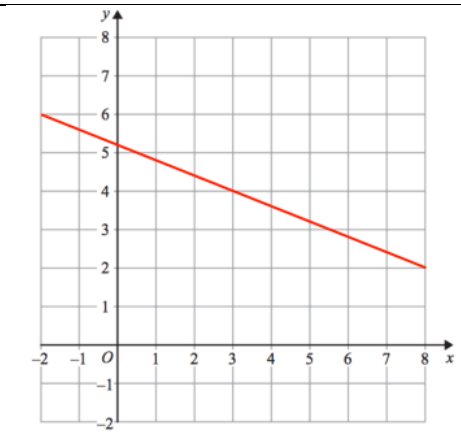
Equation: $y = \frac{3}{2}x + 1$

Questions: find the equations



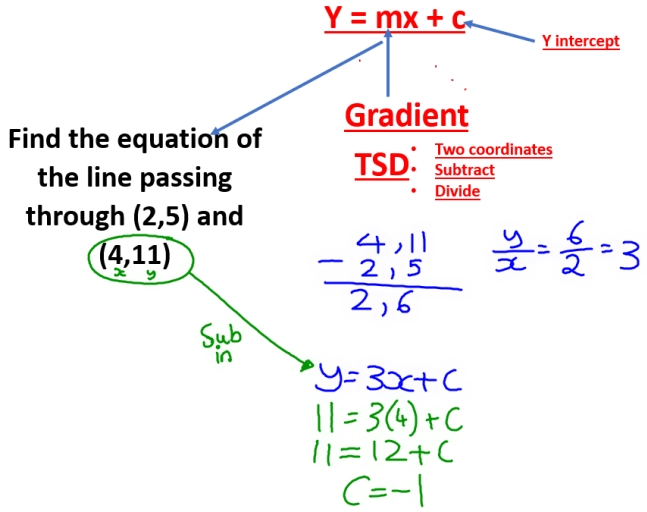






Example1

Find the equation of the line passing through (2,5) and (4,11)



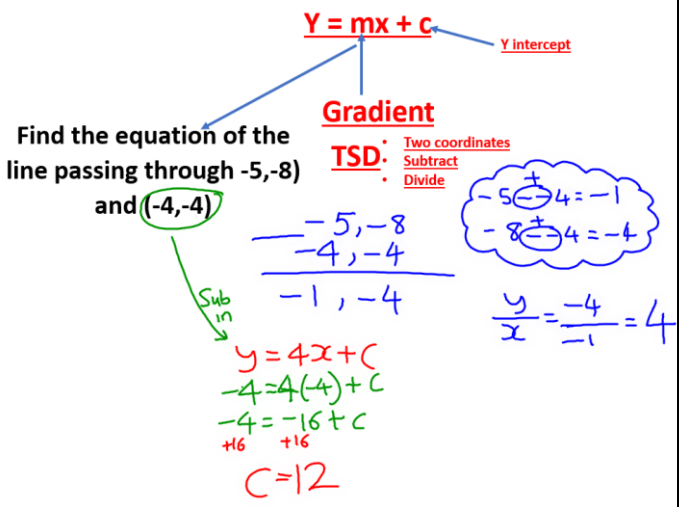
Gradient (m) = 3

Y-intercept (c) = -1

Equation: y = 3x - 1

Example2

Find the equation of the line passing through (-5,-8) and (-4,-4)



Gradient (m) = 4

Y-intercept (c) = 12

Equation: y = 4x + 12

Questions: find the equations

(1, 6) and (5, 4)	(3, 5) and (4, 1)
(−4, 2) and (1, 7)	(−5, 4) and (5, 2)
(−6, −4) and (−3, 2)	(−10, −5) and (−7, 4)

Examples

The equation of line L_1 is $y = 5x + 1$

The equation of line L_2 is $2y - 10x + 3 = 0$

Show that these two lines are parallel.

Parallel → Same gradient (m)

Re-arrange $y = mx + c$

L_1 $y = 5x + 1$ $m = 5$

L_2 $2y - 10x + 3 = 0$ (+10x) (+10x)

$2y + 3 = 10x$ (−3) (−3)

$\frac{2y}{2} = \frac{10x - 3}{2}$

$y = 5x - \frac{3}{2}$ $m = 5$

Same Gradient

Parallel to $y = 6x + 3$ and passing through $(10, 5)$

Parallel m is also 6. $m = 6$

Same gradient

$y = 6x + c$

$5 = 6(10) + c$

$5 = 60 + c$ (−60) (−60)

$-55 = c$

$y = 6x - 55$

Find the equation of the straight line passing through the point (0, 1) which is perpendicular to the line

$y = -2x + 2$

Perpendicular → Change sign & Flip

gradient

$y = -2x + 2$ $m = -2$

* Perpendicular gradient $= +\frac{1}{2}$

$(0, 1)$ x y

$y = \frac{1}{2}x + c$ ← Sub in

$1 = \frac{1}{2}(0) + c$

$1 = 0 + c$

$c = 1$

$y = \frac{1}{2}x + 1$

Questions

Find the equation of the line that is **parallel** to $y = \frac{1}{2}x - 3$ and passes through the point (6,-2).

Parallel to $y = 5x - 4$ and passing through $(2, 9)$

Parallel to $y = 4x$ and passing through $(-1, 3)$

Perpendicular to $y = -3x + 4$ and passing through $(6, 1)$

Examples

a:b = 2:5
What fraction is b?

a : b Total
2 : 5 7

$b = \frac{5}{7}$

$\frac{5}{9}$ of the apples are green. The rest are red.
Write down the ratio of red : green

Write down the ratio of green : red

$\frac{5}{9}$ = Green (5: Green; 9: Total)

R : G Total
4 : 5 9

G : R Total
5 : 4 9

Amy and Ben share some money. Amy gets four times as much as Ben.
Write down the ratio of Amy : Ben

Amy : Ben
4 : 1
×4

Write 4:7 in the form of n:1

4 : 7
÷7 ↓ ↓ ÷7
4/7 : 1

Write 4:7 in the form of 1:n

4 : 7
÷4 ↓ ↓ ÷4
1 : 7/4

a:b = 2:5
a + b = 21. what is a – b?

a : b Total
2 : 5 7
×3 ×3 ×3
6 : 15 21

a + b = 21 (Total)

21 ÷ 7 = 3

a:b = 2:5
b – a = 21, what is b + a?

a : b Total
2 : 5 7
×7 (3) ×7 ×7
14 35 49
×7
21

b – a = 21 (difference in parts)

Amy and Ben share some money in the ratio 4:9.
Amy gets £35 less than Ben. How much did they share?

A : B Total
4 : 9 13
×7 (5) ×7 ×7
28 63 91
×7
35

£35 less than means B – A (difference in parts)

a : *b* = 7 : 4

b : *c* = 2 : 5

Work out *a* : *c*

Give your answer in its simplest form.

a : b b : c
7 : 4 2 : 5
×1 ×1 ×2 ×2
7 4 4 10

LCM of 4 & 2 is 4

a : c
7 : 10

a : b is 4:9. Write down an equation

3 : 9 simplifies to 1 : 3

3 × 3 = 1 × 9
9 = 9

a : b
4 : 9

9a = 4b

8x = 3y Write down the ratio of x:y

8x = 3y
x : y
3 : 8

Jamie and Alastair share some sweets in the ratio 7 : 5.
Jamie gives 2 sweets to Alastair. The ratio of sweets is now 13 : 11.
How many sweets did each initially have?

J : A
before 7x : 5x
Now 7x−2 : 5x+2
Now 13 : 11

$11(7x-2)=13(5x+2)$
$77x-22=65x+26$
$+22 \quad +22$
$77x=65x+48$
$-65x \quad -65x$
$\frac{12x}{12}=\frac{48}{12}$
$x=4$

The ratio of green to yellow beads is 4 : 5, and there are initially 27 beads. I add some yellow beads and the ratio is now 1 : 3. How many yellow beads did I add?

G : Y Total
4 : 5 9
×3 ×3 ×3
before 12 : 15 27
Now 12 : 15+x
Now 1 : 3

$\frac{27}{9}=3$

$3(12)=1(15+x)$
$36=15+x$
$-15 \quad -15$
$21=x$

Questions

a:b = 3:5
What fraction is b?

$\frac{8}{9}$ of the apples are green. The rest are red.
Write down the ratio of red : green

Write down the ratio of green : red

Amy and Ben share some money. Ben gets five times as much as Amy.
Write down the ratio of Amy : Ben

Write 3:8 in the form of n:1

Write 3:8 in the form of 1:n

a:b = 3:5
a + b = 32. what is a – b?

a:b = 3:5
b – a = 32, what is b + a?

Amy and Ben share some money in the ratio 5:8.
Amy gets £33 less than Ben. How much did they share?

a, *b* and *c* are positive integers.
$a : b = 3 : 8$ and $b : c = 6 : 11$
Work out the **smallest** possible value of $a + b + c$

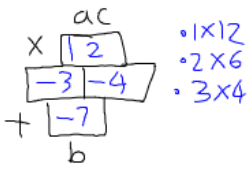
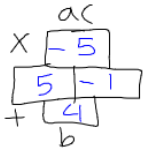
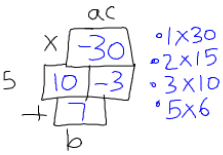
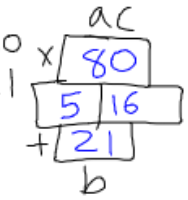
a : b is 4:9. Write down an equation

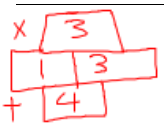
8x = 3y Write down the ratio of x:y

The ratio of the number of boys to girls at a party is 3 : 4
Six boys leave the party.
The ratio of the number of boys to girls at the party is now 5 : 8

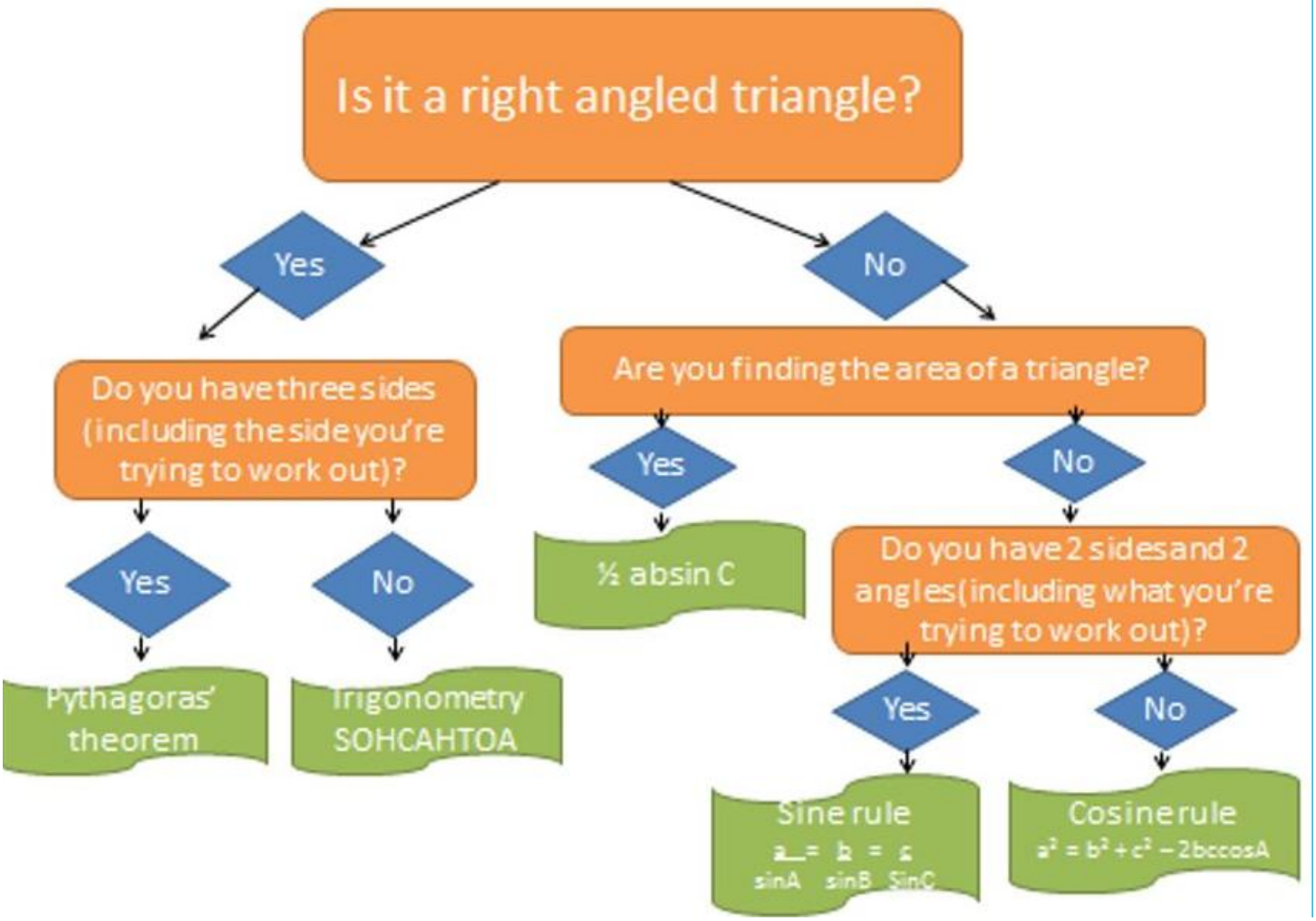
Work out the number of girls at the party.

The ratio of red to blue counters is 2 : 5 and there are 40 blue counters. When I remove some red counters the ratio is now 1 : 4. How many red counters did I remove?

Examples	
$x^2 - 7x + 12$	ax^2+bx+c $x^2-7x+12$ $(x-3)(x-4)$ $a=1$ $b=-7$ $c=12$  •1x12 •2x6 •3x4
$x^2 + 4x - 5$	ax^2+bx+c x^2+4x-5 $(x+5)(x-1)$ $a=1$ $b=4$ $c=-5$  •1x5
$x^2 - 81$	x^2-81 ← difference of two squares. $(x+9)(x-9)$
$2x^2 + 7x - 15$	ax^2+bx+c $2x^2+7x-15$ $2x^2+10x-3x-15$ $2x(x+5) \mid -3(x+5)$ $(2x-3)(x+5)$ $a=2$ $b=7$ $c=-15$  •1x30 •2x15 •3x10 •5x6
$\dfrac{20x^2 + 21x + 4}{16x^2 - 1}$	ax^2+bx+c $20x^2+21x+4$ $20x^2+5x+16x+4$ $5x(4x+1) \mid 4(4x+1)$ $(5x+4)(4x+1)$ $a=20$ $b=21$ $c=4$  •1x80 •2x40 •4x20 •5x16 $16x^2-1$ ← difference of 2 squares $(4x+1)(4x-1)$ $\dfrac{(5x+4)(4x+1)}{(4x+1)(4x-1)} = \dfrac{5x+4}{4x-1}$

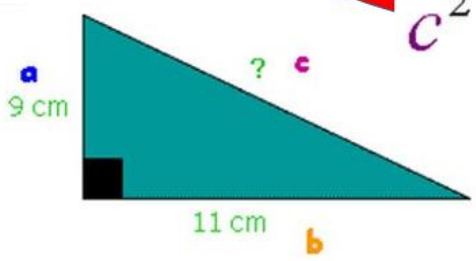
Factorise: $2w + 6$	$2w+6$ HCF = 2 $2(w+3)$
Factorise: $w^2 - 16$	difference of 2 squares w^2-16 $(w+4)(w-4)$
Factorise: $w^2 + 4w + 3$	w^2+4w+3 $a=1$ $b=4$ $c=3$ $(w+1)(w+3)$ 
Simplify $\frac{2x+8}{x^2-16}$	$2x+8 = 2(x+4)$ $x^2-16 = (x+4)(x-4)$ $\frac{2(x+4)}{(x+4)(x-4)} = \frac{2}{x-4}$
Simplify $\frac{x^2-8x+12}{x^2-36}$	
Simplify $\frac{2x^2+7x-9}{4x^2-81}$	

TRIGONOMETRY



PYTHAGORAS

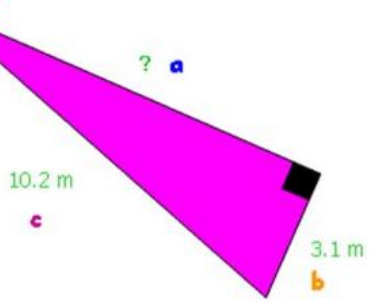
$$c^2 = a^2 + b^2$$



1. Label the sides
2. Use the formula: $c^2 = a^2 + b^2$
3. Put in the numbers:

$$c^2 = 9^2 + 11^2$$
$$c^2 = 81 + 121$$
$$c^2 = 202$$
$$c = \sqrt{202}$$
$$c = 14.2cm \quad (1dp)$$

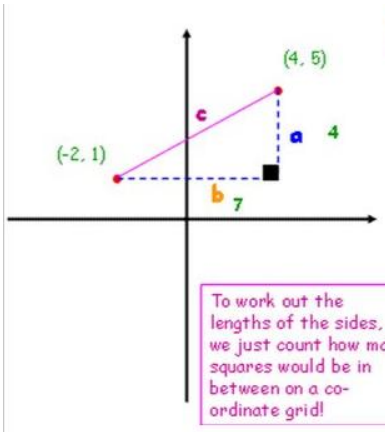
Square root both sides!



1. Label the sides
2. Use the formula: $a^2 = c^2 - b^2$
3. Put in the numbers:

$$a^2 = 10.2^2 - 3.1^2$$
$$a^2 = 104.04^2 - 9.61^2$$
$$a^2 = 94.43$$
$$a = \sqrt{94.43}$$
$$a = 9.72m \quad (2dp)$$

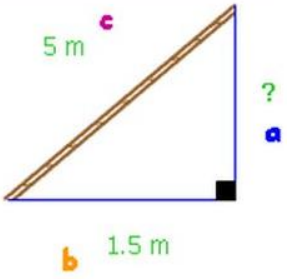
Square root both sides!



To work out the lengths of the sides, we just count how many squares would be in between on a co-ordinate grid!

PYTHAGORAS

A 5m ladder rests against the side of a house. The foot of the ladder is 1.5m away from the house. How far up the side of the house does the ladder reach?



1. Label the sides
2. Use the formula: $c^2 = a^2 + b^2$
3. Put in the numbers:

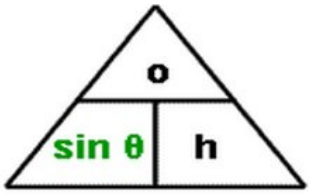
$$c^2 = 4^2 + 7^2$$
$$c^2 = 16 + 49$$
$$c^2 = 65$$
$$c = \sqrt{65}$$
$$c = 8.1 \quad (1dp)$$

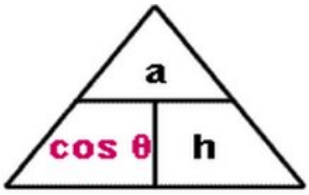
Square root both sides!

1. Label the sides
2. Use the formula: $a^2 = c^2 - b^2$
3. Put in the numbers:

$$a^2 = 5^2 - 1.5^2$$
$$a^2 = 25^2 - 2.25^2$$
$$a^2 = 22.75$$
$$a = \sqrt{22.75}$$
$$a = 4.77m \quad (2dp)$$

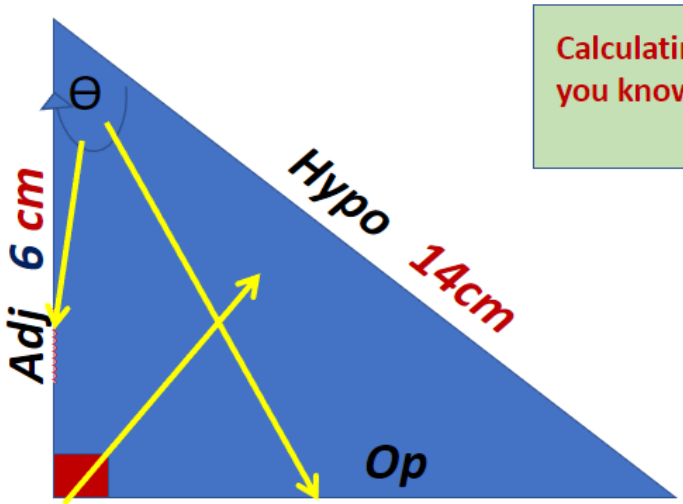
Square root both sides!





1. *Label*
2. *Information*
3. *Rule*
4. *Substitution*
5. *Work out the answer*
6. *Round if needed*

O A O
S H C H T A



Calculating an angle if you know two sides

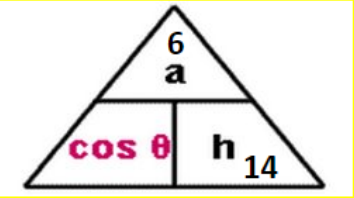
2) Θ = X
A = 6 cm
H = 14 cm

SOH C AH TOA
SOH CAH TOA

$Cos\ \Theta = \frac{A}{H}$

4) $Cos\ \Theta = \frac{6}{14}$

5) Θ = shift Cos 6/14
Θ = 64.62306647



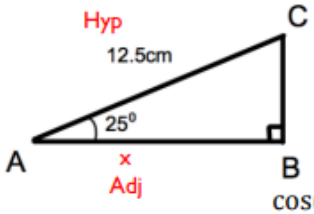
6) Θ = 64.6 cm
(3 SF)

What you need to know:

Trigonometry – Finding a side 1

SOH	CAH	TOA
SINE = $\frac{OPP}{HYP}$	COSINE = $\frac{ADJ}{HYP}$	TANGENT = $\frac{OPP}{ADJ}$

Calculate the length of AB.



Step 1 – Label the sides you need as O, A or H.
Step 2 – Use this to decide which trig ratio to use.
Step 3 – Substitute the given values into the formula.
Step 4 – Use inverse operations to rearrange & isolate x.

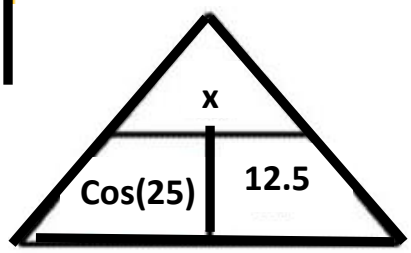
$\cos(25) = \frac{x}{12.5}$

The inverse of dividing by 12.5 is multiplying.

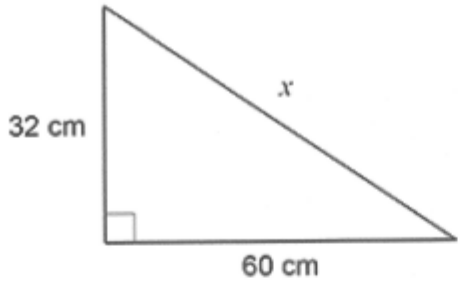
$\cos(25) \times 12.5 = x$

Don't round your answer, you get no marks for this!

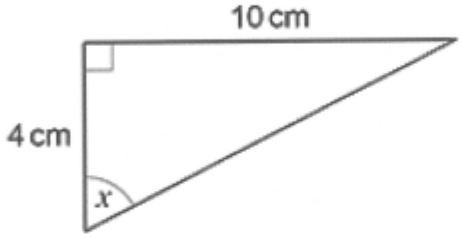
$x = 11.32884734\ cm$



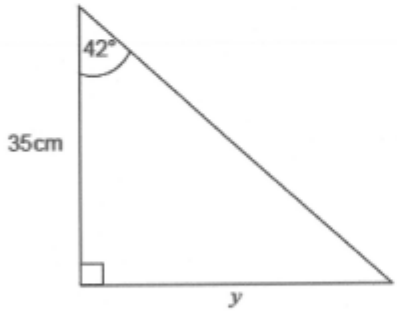
1)



2)

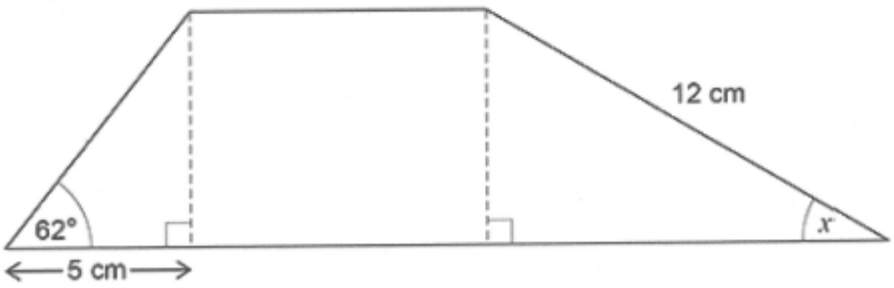


3)



Not drawn accurately

4)



Work out the size of angle x.

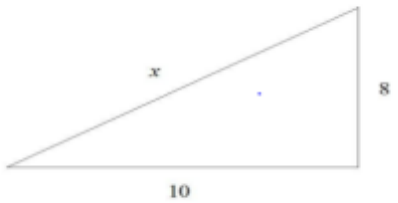
1. Use your calculator to work out

a) 4.3^2

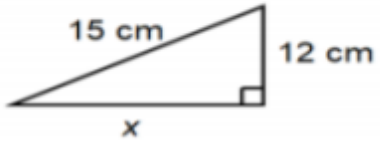
b) $7^2 + 9^2$

c) $\sqrt{31.36}$

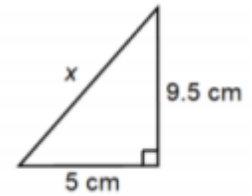
2. Find the value of x in questtions 2-5



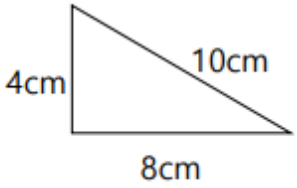
3. Find the value of x in the following



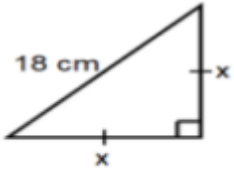
4.



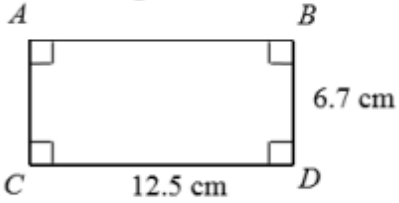
5. Is this triangle right-angled?



6. Find the value of x in the following



7. Find the length BC



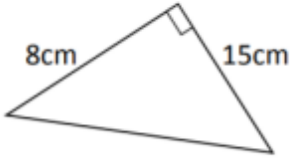
8. ABC is a right -angled triangle.

AB = 15.5 m and AC = 12 m.

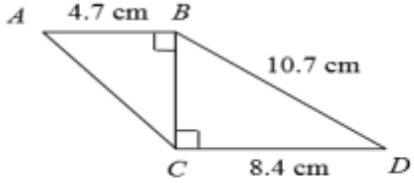
Find the length of BC.

Give your answer to 1 decimal place.

9. Find the perimeter of the following



10. Find the length AC

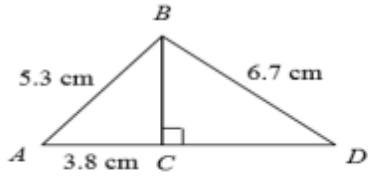


11. Triangle ABC has perimeter 12 m.

AB = 5 m and BC = 4 m.

Is triangle ABC a right-angled triangle?
Show clearly how you decide.

12. Find the length CD

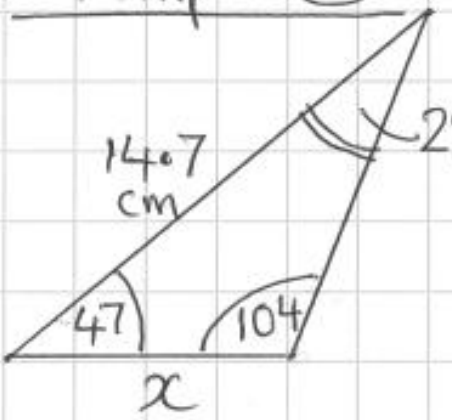


Yr 11 (H) Revision - Sine Rule

To calculate a length $\frac{a}{\sin(A)} = \frac{b}{\sin(B)}$

To calculate an angle $\frac{\sin(A)}{a} = \frac{\sin(B)}{b}$

Example (1)

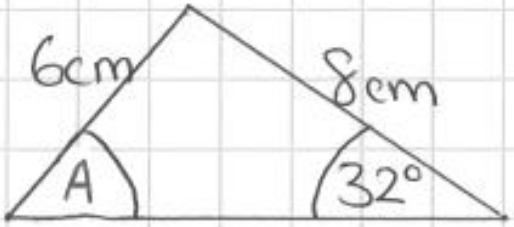


firstly work out the missing angle.... $180 - 47 - 104 = \underline{29}$

$$\frac{x}{\sin(29)} = \frac{14.7}{\sin(104)}$$

$$x = \frac{14.7}{\sin(104)} \times \sin(29) = \underline{7.34\text{cm}}$$

Example (2)

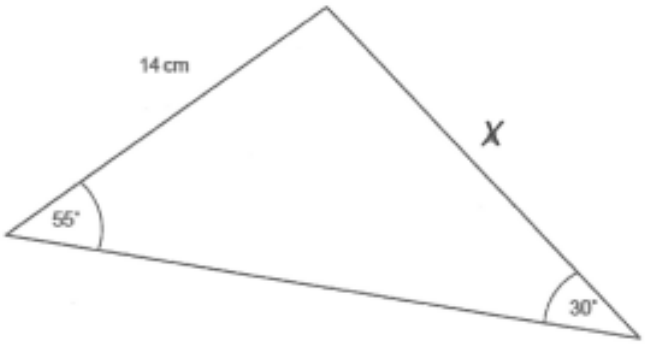


$$\frac{\sin(A)}{8} = \frac{\sin(32)}{6}$$

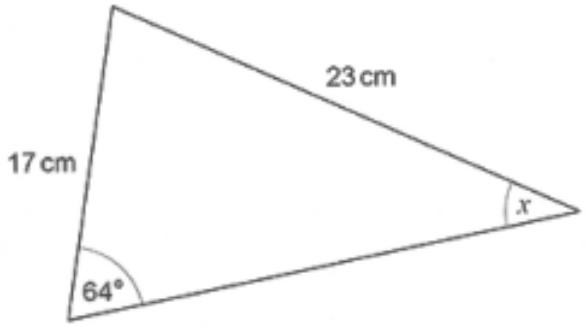
$$\sin(A) = \frac{\sin(32)}{6} \times 8.$$

then $\sin^{-1}(\text{ANS}) = \underline{45^\circ}$

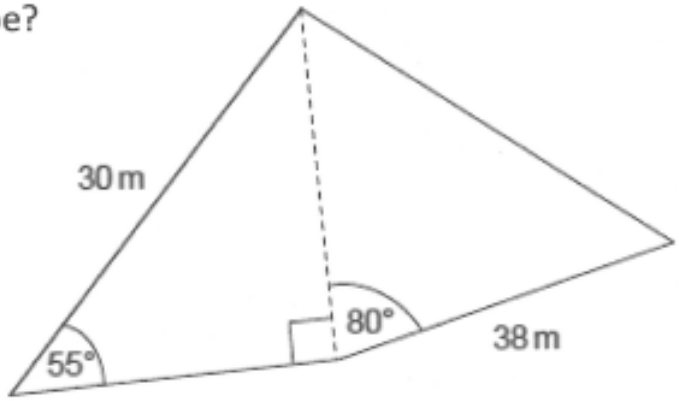
1)



2)

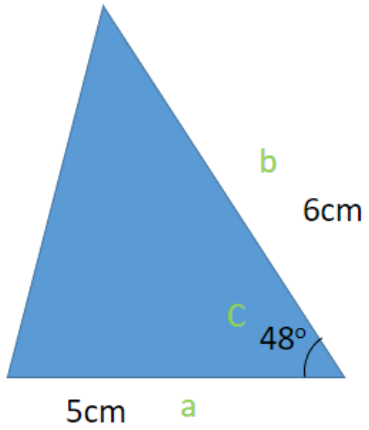


3) Perimeter of shape?



Example – find the area

Learn the formula:- Area$= \frac{1}{2}abSinC$



Find the area of the triangle to 1dp.

1) Label sides
2) Substitute in values:

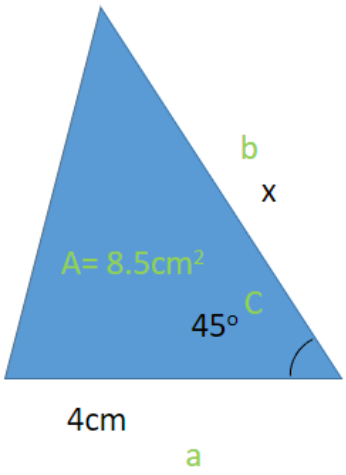
$$\text{Area} = \frac{1}{2} \times 5 \times 6 \times Sin(48)$$

3) Type in to your calculator:

11.1cm to 1dp

Example – missing side

Learn the formula:- Area$= \frac{1}{2}abSinC$



Find the length of 'x' 1dp.

1) Label sides
2) Substitute in values:

$$8.5 = \frac{1}{2} \times 4 \times ? \times Sin45$$

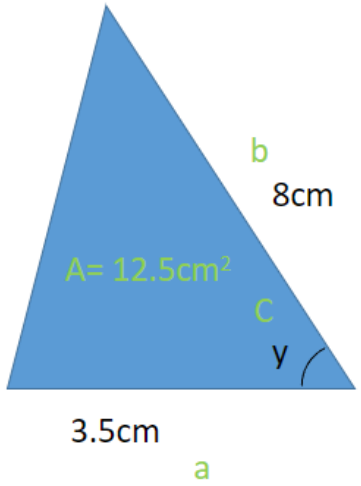
3)Divide through by everything except the ?.

$$\frac{8.5}{\frac{1}{2} \times 4 \times sin45} = ?$$

4) Type in to calculator:6.0cm to 1dp

Example – missing angle

Learn the formula:- Area$= \frac{1}{2}abSinC$



Find the length of 'y' 1dp.

1) Label sides
2) Substitute in values:

$$12.5 = \frac{1}{2} \times 3.5 \times 8 \times Sin(?)$$

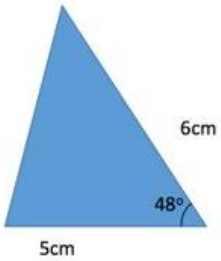
3)Divide through by everything except the sin(?).

$$\frac{12.5}{\frac{1}{2} \times 3.5 \times 8} = \sin(?)$$

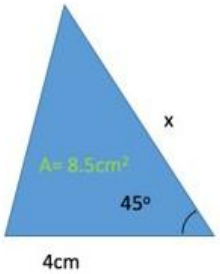
4) Type in to calculator and don't forget to sin $^{-}$1:62.3° to 1dp

Area = $\frac{1}{2}$ abSinC

Find the **area**



Find the **missing side**



Find the **missing angle**