

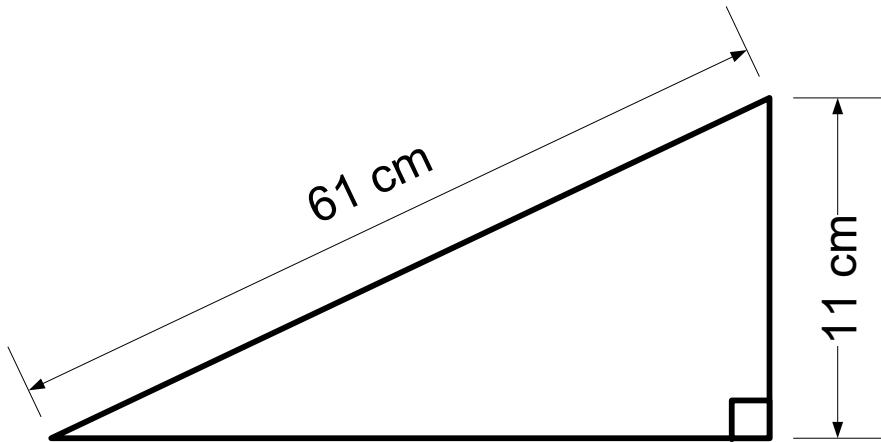
Mathematics Revision Sheets



Rule for the number of minutes to cook Beef:

Multiply the weight, in kg, by 40 and then add 20.

How long would it take to cook a joint that weighs 2.5kg?



What is the area of the triangle?

Here are some numbers in an arithmetic sequence.

4, 11, 18, 25, ..., ..., ...

Write down the next three numbers in the sequence.

Put these numbers into order.

$\frac{4}{5}$ 70% 0.72 $\frac{3}{4}$ 0.702

How many parts has the following
been split into?

12:14:13 _____ parts

4: 8: 11 _____ parts

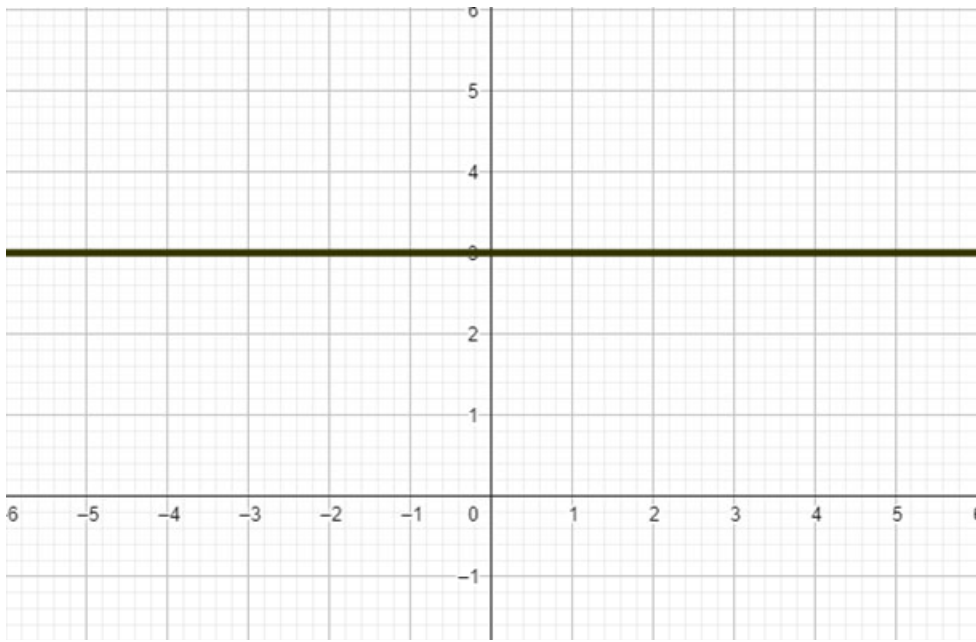
Bill and Joanne share £50 in the
proportion 3:2. How much is one
part worth?

Write the following ratios as fractions

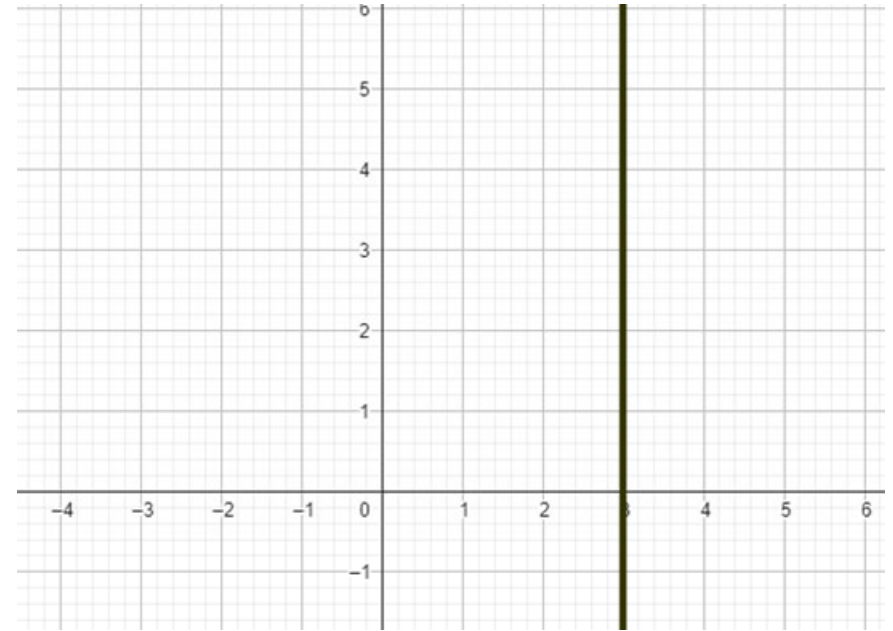
8:3:8:2

Ian and Charlotte share some sweets
in the ratio 5:4. Ian gets 75 sweets.
How many does Charlotte get?

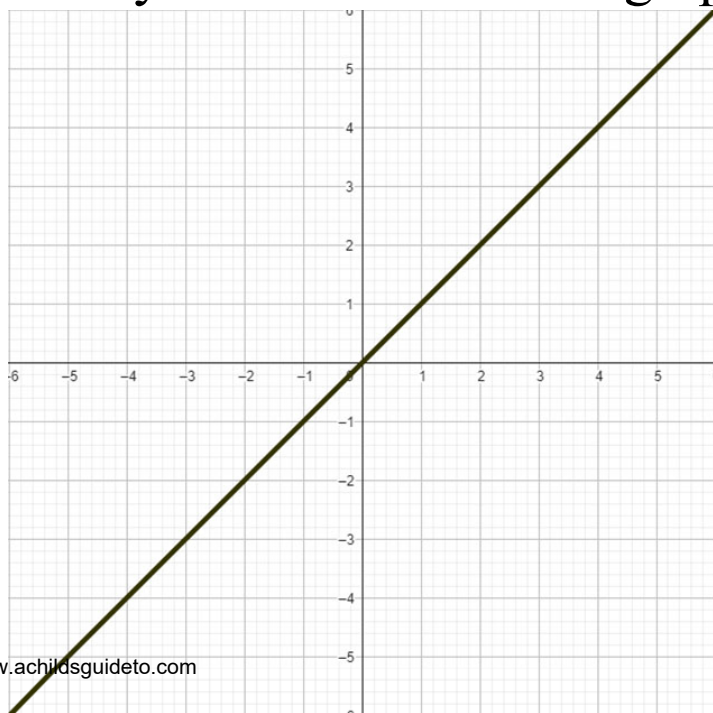
Identify the function of the graph.



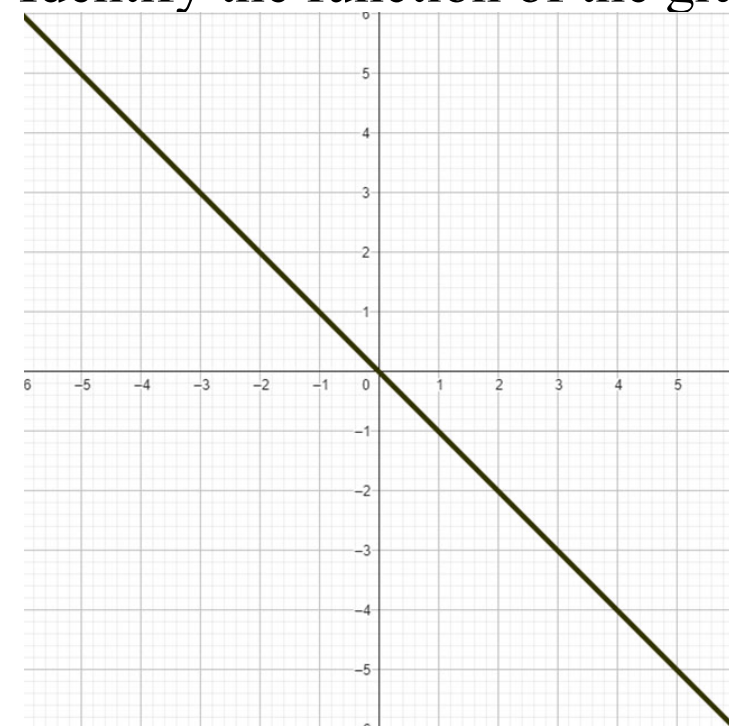
Identify the function of the graph.



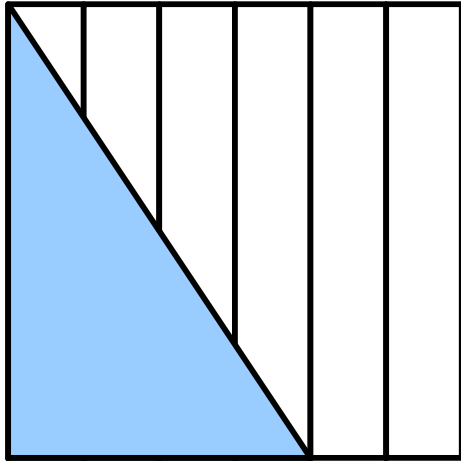
Identify the function of the graph.



Identify the function of the graph.



What fraction is shaded blue?



Convert the following to decimals and percentages.

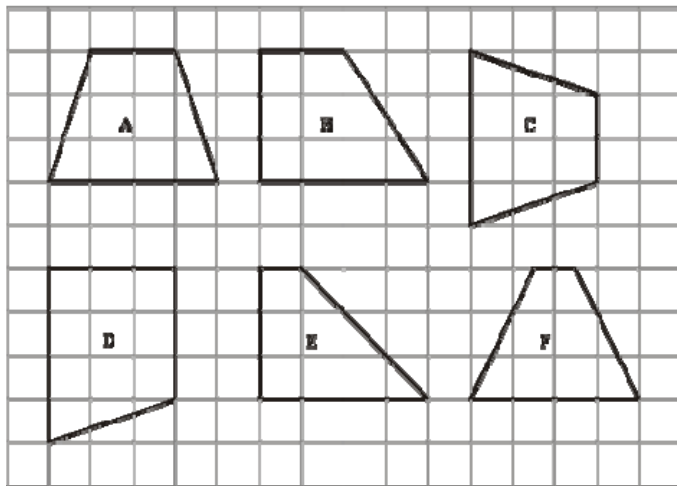
$$\frac{13}{25} =$$

$$\frac{41}{50} =$$

What is $\frac{5}{8}$ of 240?

Give the answer to the following in its simplest form.

$$\frac{6}{25} \div \frac{18}{45} =$$

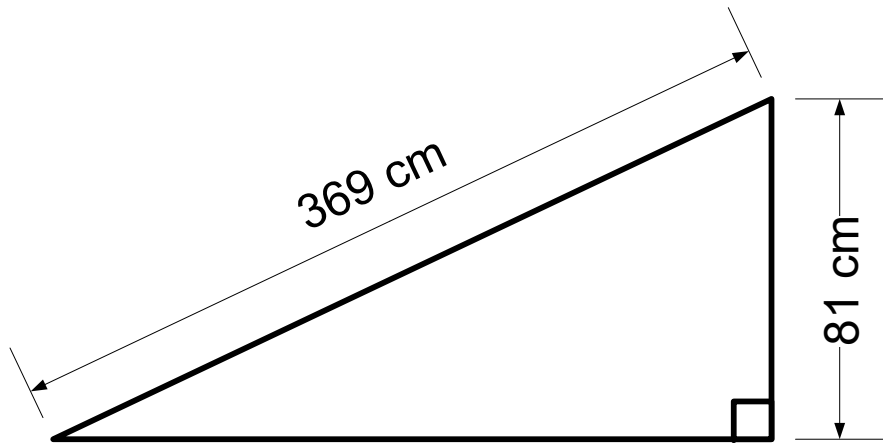


Which shapes are congruent?

Here are some numbers in a sequence.

1, -3, -7, -11, ..., ..., ...

Write down the next three numbers in the sequence.

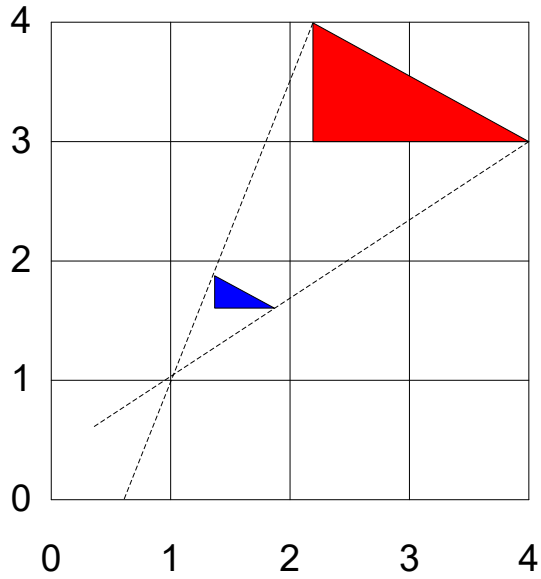


What is the area of the triangle?

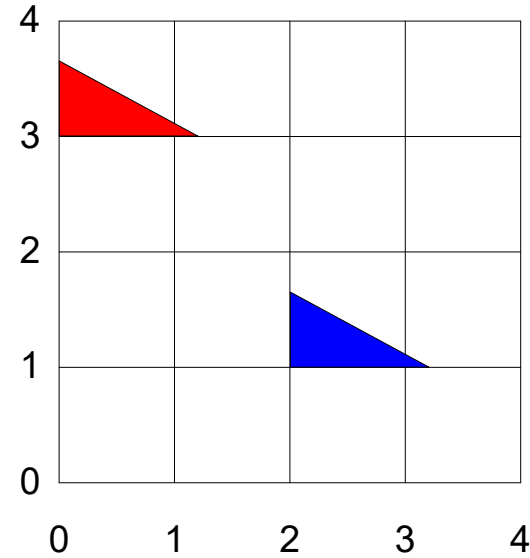
Put these numbers into order.

$\frac{9}{11}$ 81% 0.8 $\frac{17}{20}$ 0.802802

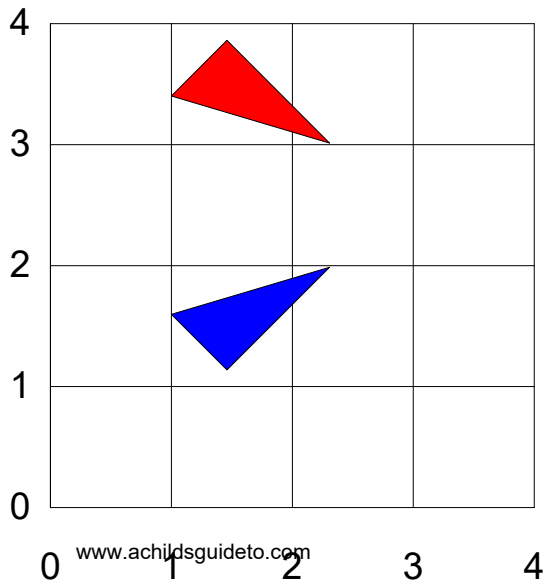
Describe fully the single transformation shown below.



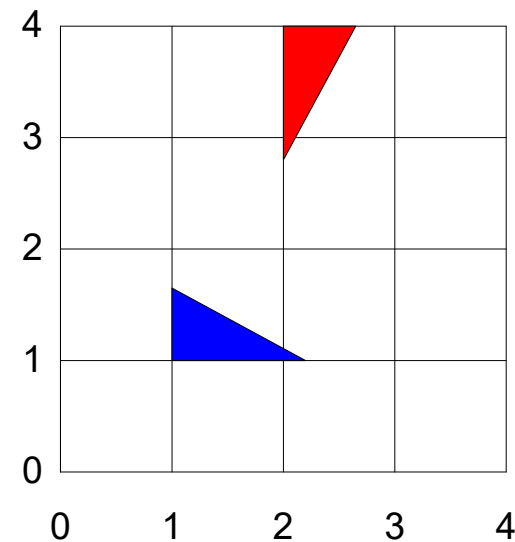
Describe fully the single transformation shown below.



Describe fully the single transformation shown below.



Describe fully the single transformation shown below.



Fill the table in for $y=x-8$ for $-3 \leq x \leq 7$

x	-3	-2	-1	0	1	2	3	4	5	6	7
y			-9							-2	

Write 84 as a product of its prime factors.

Expand the following:

$$-8(3x - 4)$$

$$\begin{array}{c|c|c} & 3x & -4 \\ \hline -8 & & \end{array}$$

$$6x(7x + 9)$$

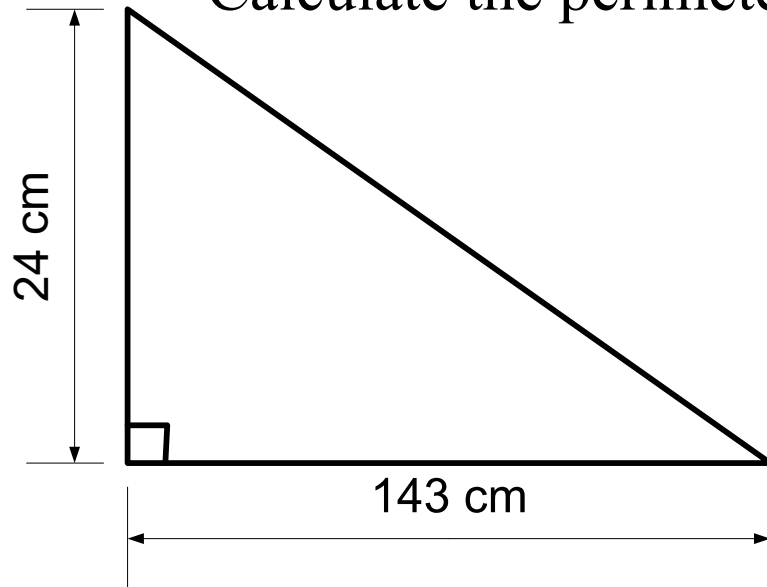
$$\begin{array}{c|c|c} & 7x & +9 \\ \hline 6x & & \end{array}$$

Factorise the following

$$16x - 36$$

$$\underline{\hspace{2cm}} (\underline{\hspace{4cm}})$$

Calculate the perimeter



Write 180 as a product of its prime factors.

Write the following ratios as fractions

3:7:10:5

Factorise the following

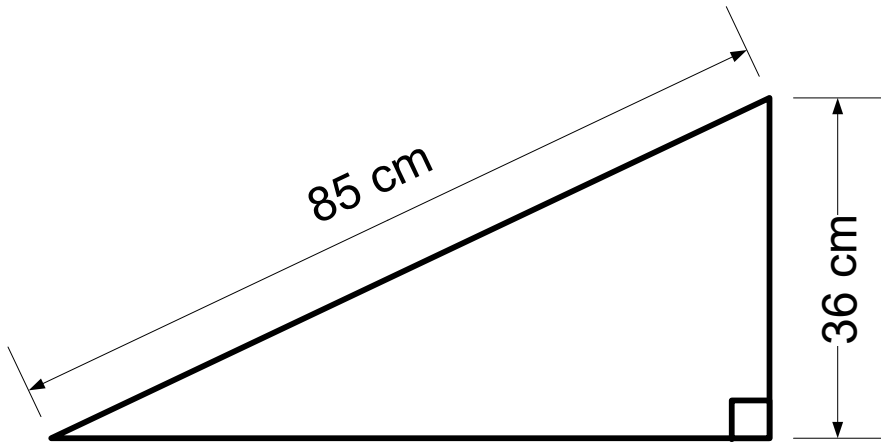
$$4pq^2 + 6p^2q^3$$

___ (_____)

Pay is calculated by the following rule:

Pay = Basic Pay + Overtime rate times the number of hours worked overtime.

**Bill's basic pay was £360 per week.
His overtime rate was £14 per hour.
He worked 8 hours overtime.
How much was Bill paid?**



What is the area of the triangle?

Here are some numbers in an geometric sequence.

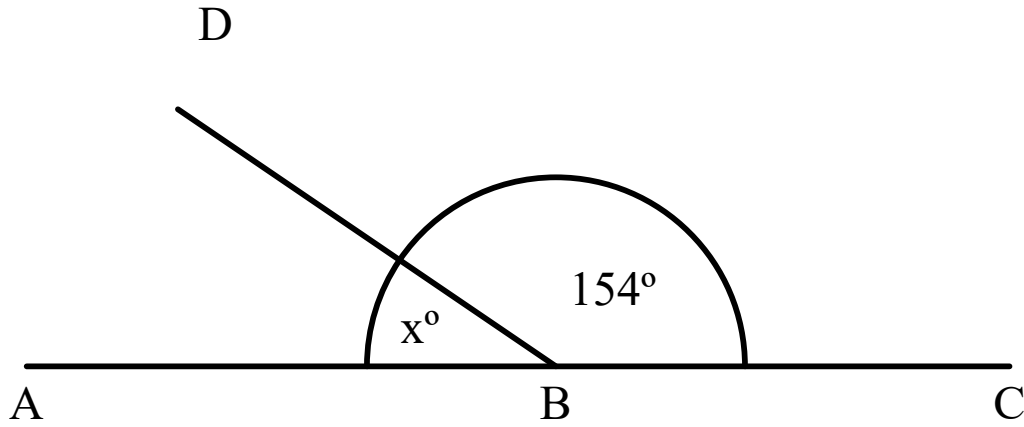
2, -4, 8, -16, ..., ..., ...

Write down the next three numbers in the sequence.

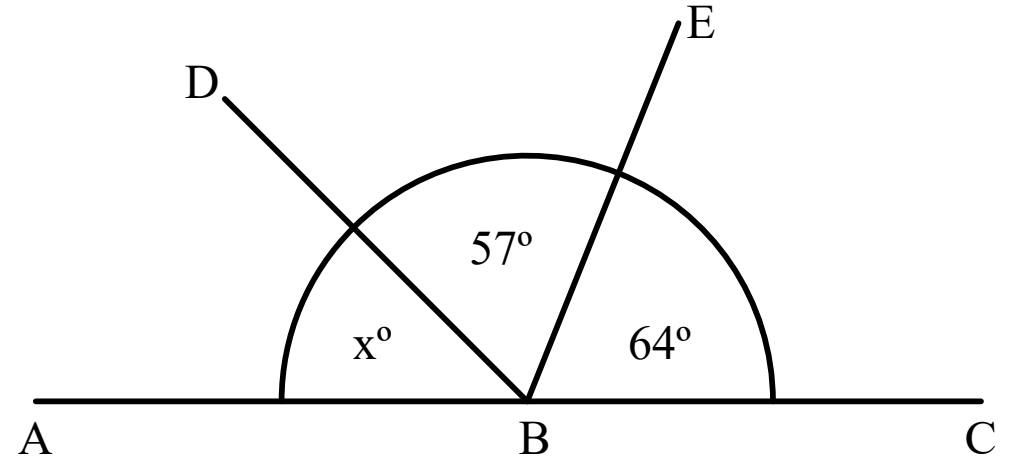
Put these numbers into order.

$\frac{7}{10}$ 70.2% 0.72 $\frac{3}{4}$ 0.079

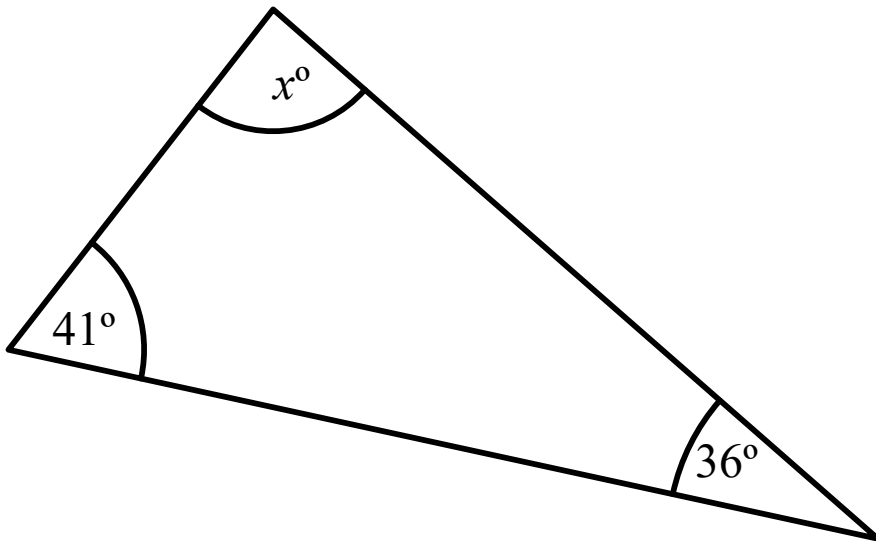
ABC is a straight line. Find the value of x.



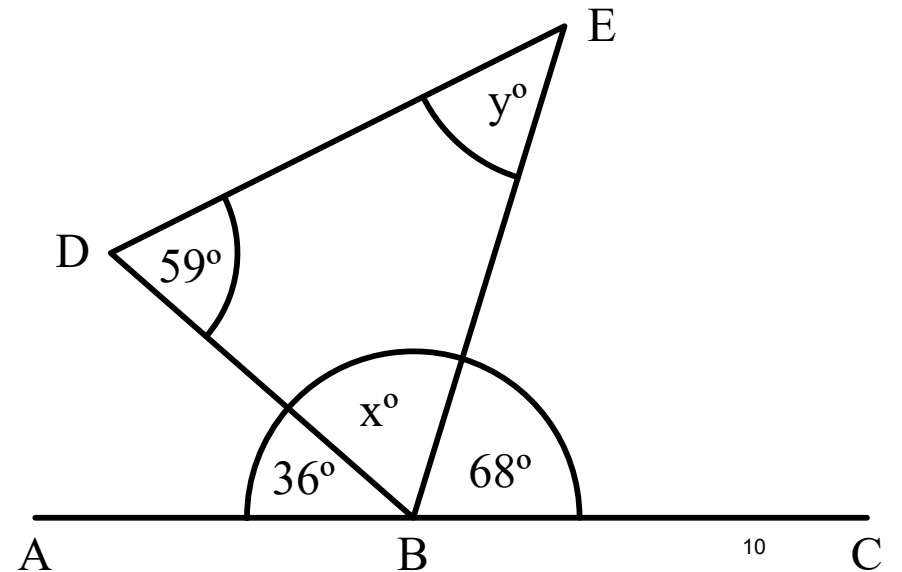
ABC is a straight line. Find the value of x.



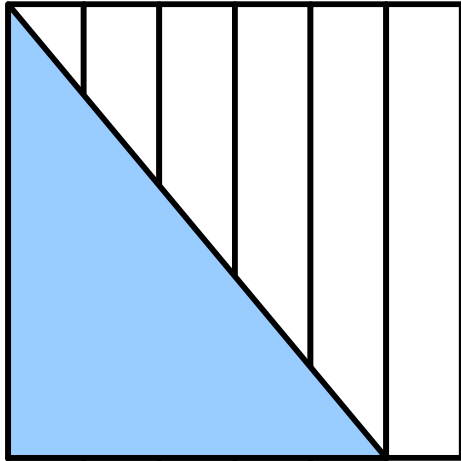
ABC is a triangle. Find the value of x.



ABC is a straight line. BDE is a triangle. Find the values of x and y.



What fraction is shaded blue?



Convert the following to decimals and percentages.

$$\frac{8}{25} =$$

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

What is $\frac{7}{8}$ of 360?

Give the answer to the following in its simplest form.

$$\frac{6}{25} \div \frac{18}{45} =$$

Fill the table in for $y=4x-8$ for $-3 \leq x \leq 7$

x	-3	-2	-1	0	1	2	3	4	5	6	7
y						0				16	

Write 240 as a product of its prime factors.

Expand the following:

$$3(4x - 5)$$

$$5x(3x + 2)$$

3	4x	-5
---	----	----

5x	3x	+2
----	----	----

Factorise the following

$$12x + 8$$

$$\underline{\hspace{2cm}} \left(\underline{\hspace{4cm}} \right)$$

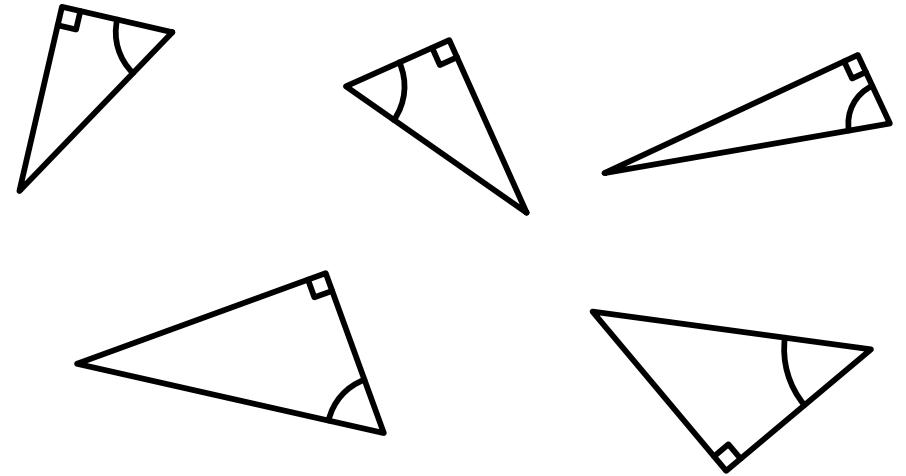
Copy and complete the equations

$$\sin \theta = \underline{\hspace{2cm}}$$

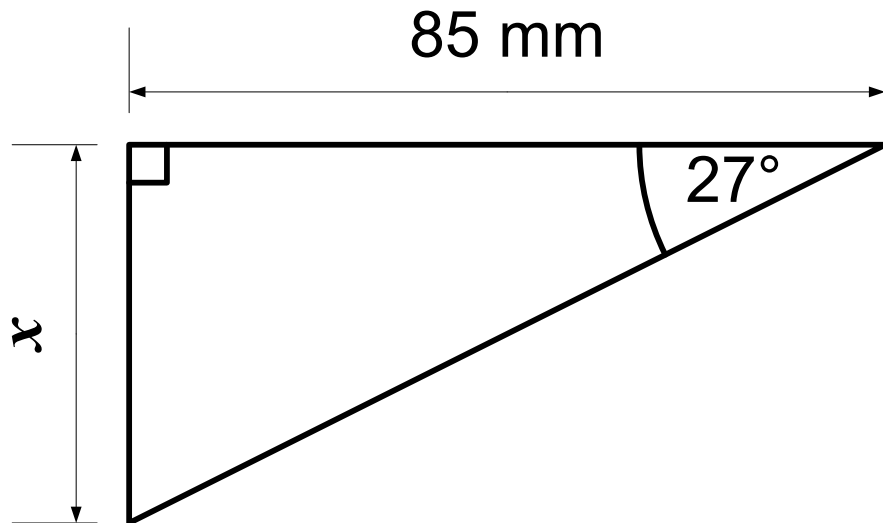
$$\cos \theta = \underline{\hspace{2cm}}$$

$$\tan \theta = \underline{\hspace{2cm}}$$

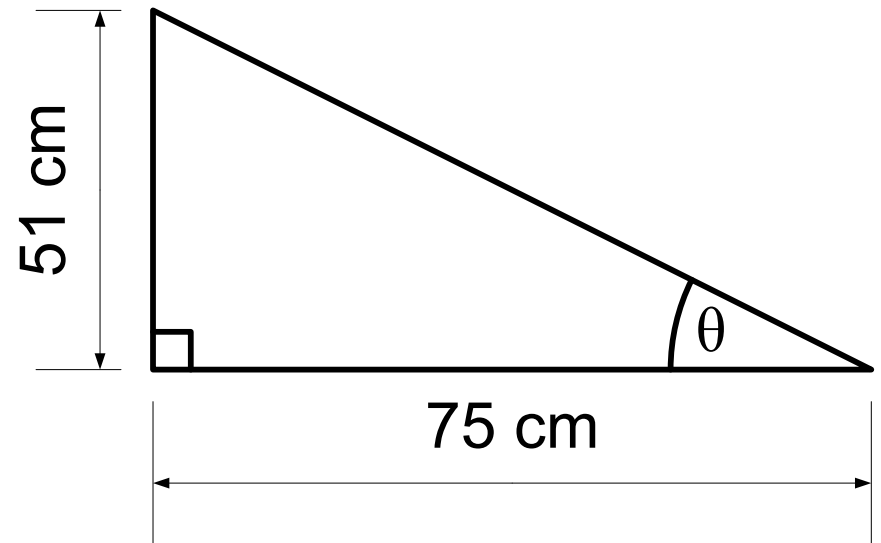
Label the sides in relation to the shown angle.



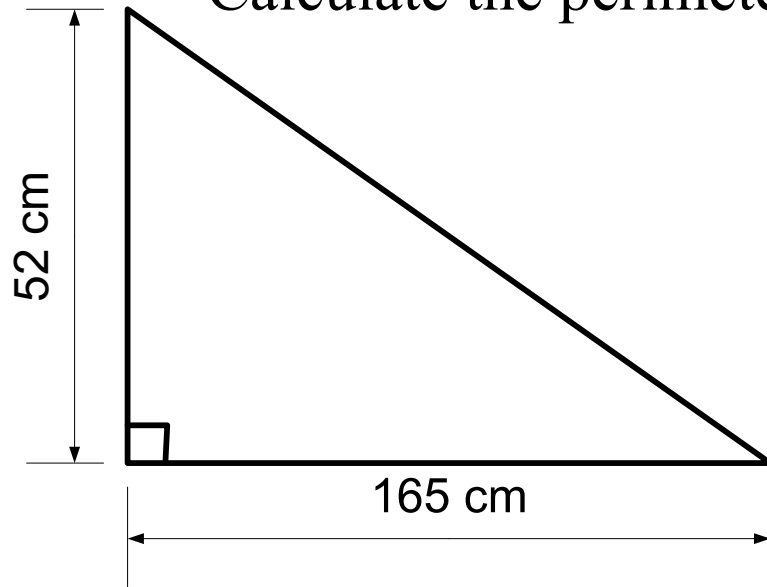
Calculate the length of side x .



Calculate the size of angle θ .



Calculate the perimeter



Write 360 as a product of its prime factors.

Write the following ratios as fractions

12:3:7:8

Factorise the following

$$24+16f$$

___ (_____)

How many parts has the following
been split into?

7: 4: 9 _____ parts

3: 5: 15 _____ parts

Bill and Joanne share £50 in the
proportion 3:7. How much more
does Joanne get?

Write the following ratios as fractions

3:7:10:5

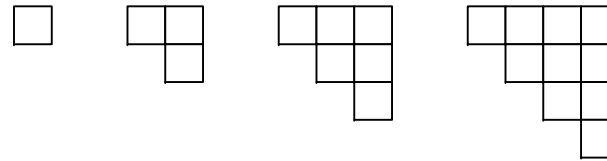
Fred and Nazma share some sweets
in the ratio 5:4. Fred gets 60 sweets.
How much does Nazma get?

Fill in the table for the co-ordinates
for $y=x^2$ for $-3 \leq x \leq 5$

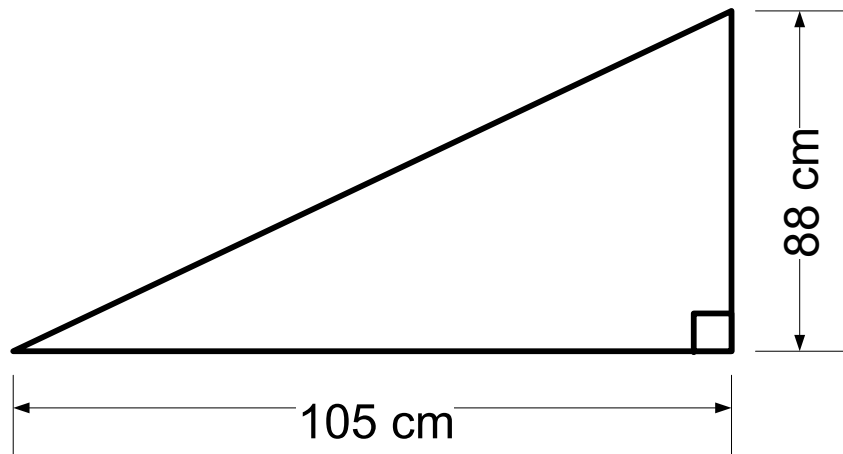
x	-3	-2	-1	0	1	2	3	4	5
y	9				1				25

Give the coordinates
of the y intercept. (\quad, \quad)

Look at the pattern made from the
squares.



Draw the next two patterns.



What is the perimeter of the triangle?

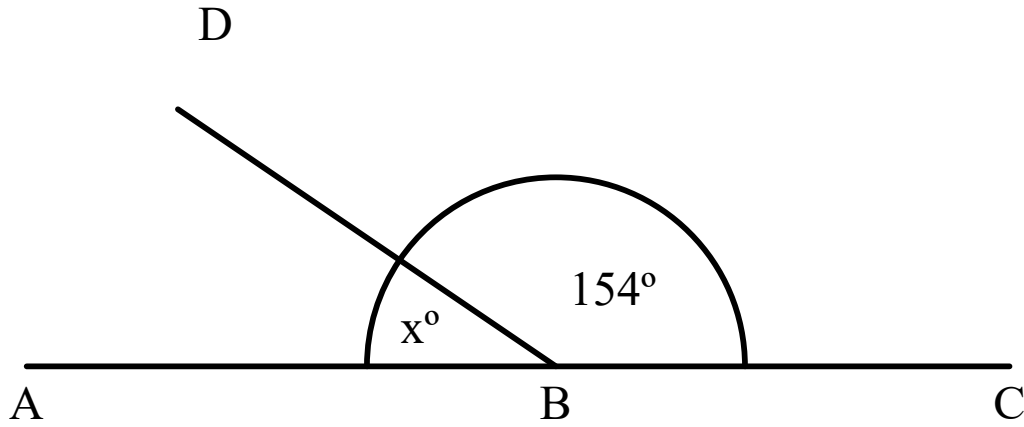
$$\frac{11}{12} \div \frac{3}{8} =$$

$$\frac{11}{12} \times \frac{3}{8} =$$

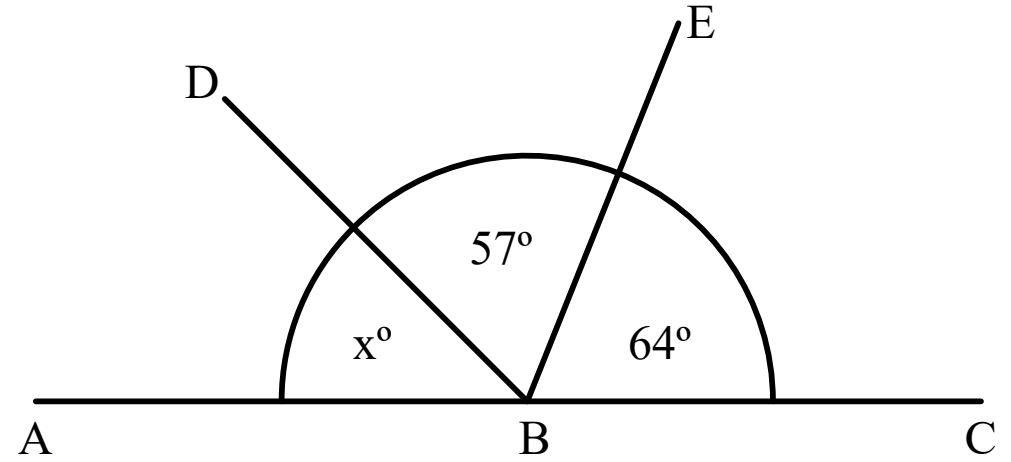
$$\frac{11}{12} + \frac{3}{8} =$$

$$\frac{11}{12} - \frac{3}{8} =$$

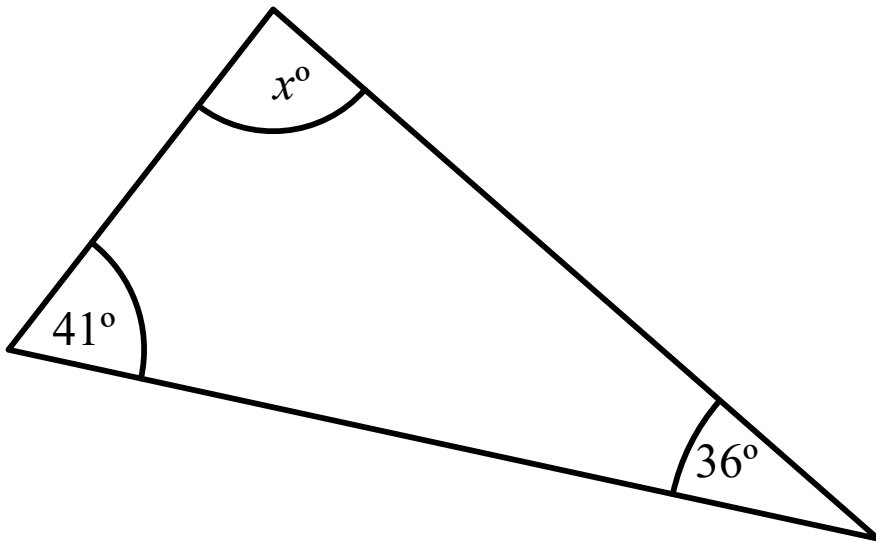
ABC is a straight line. Find the value of x.



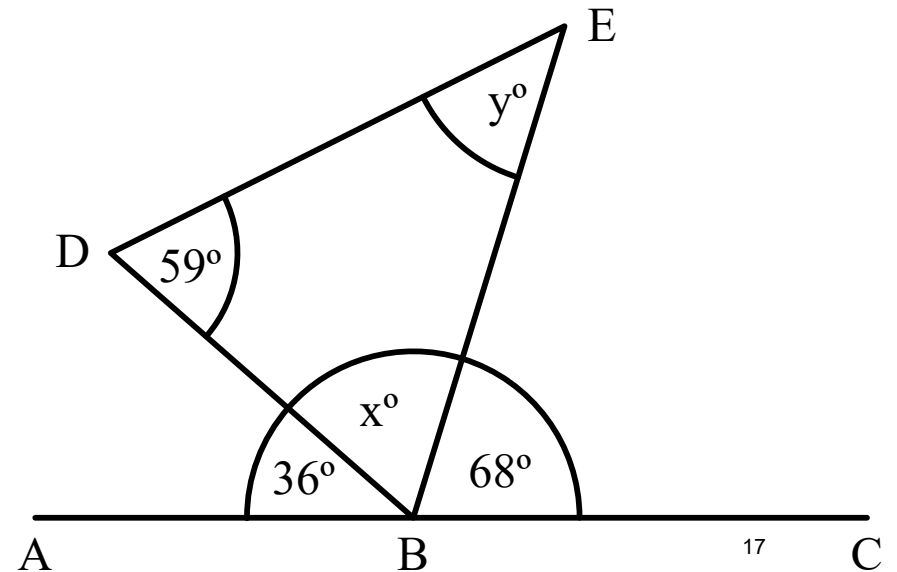
ABC is a straight line. Find the value of x.



ABC is a triangle. Find the value of x.



ABC is a straight line. BDE is a triangle. Find the values of x and y.



How many parts has the following
been split into?

6:2:5:7 _____ parts

12:6:9:1 _____ parts

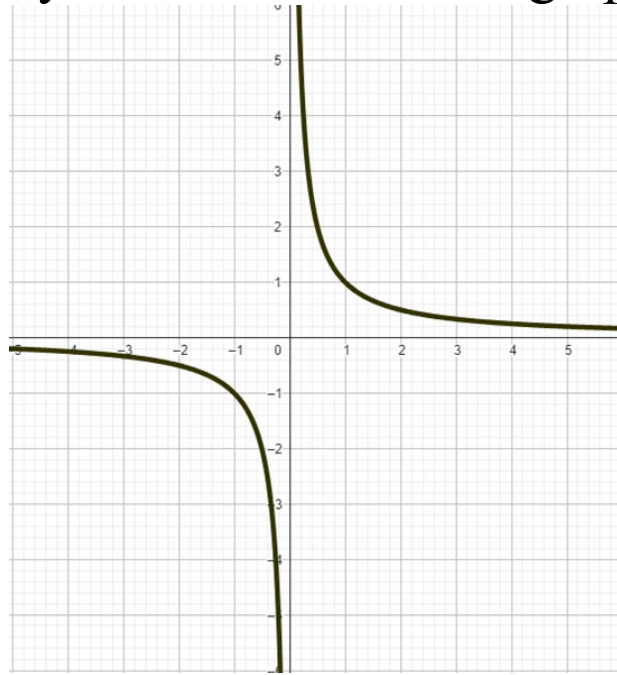
Bill and Joanne share £40 in the
proportion 3:2. How much is one
part worth?

Write the following ratios as fractions

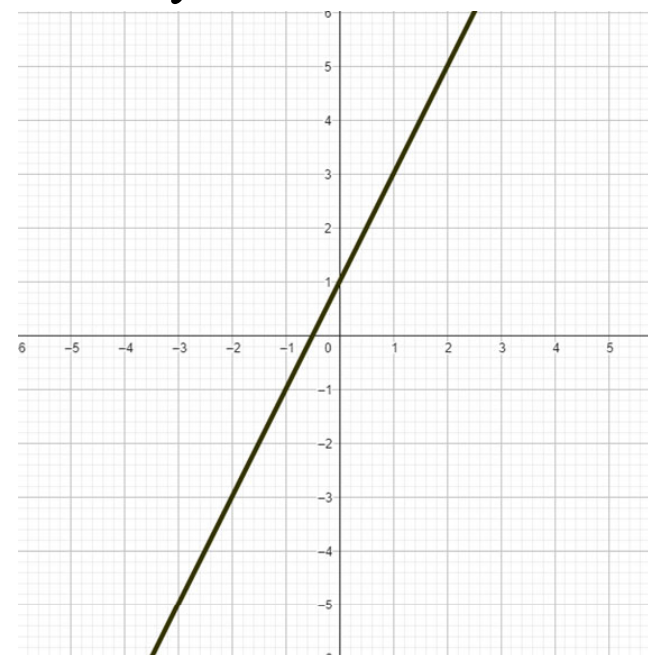
6:9:15

Put the ratio 6:5 in the form n:1.

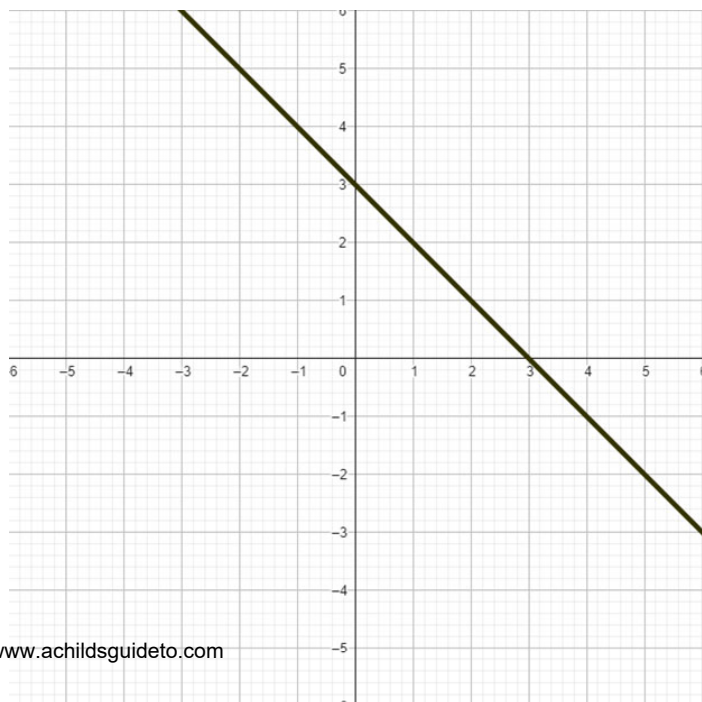
Identify the function of the graph.



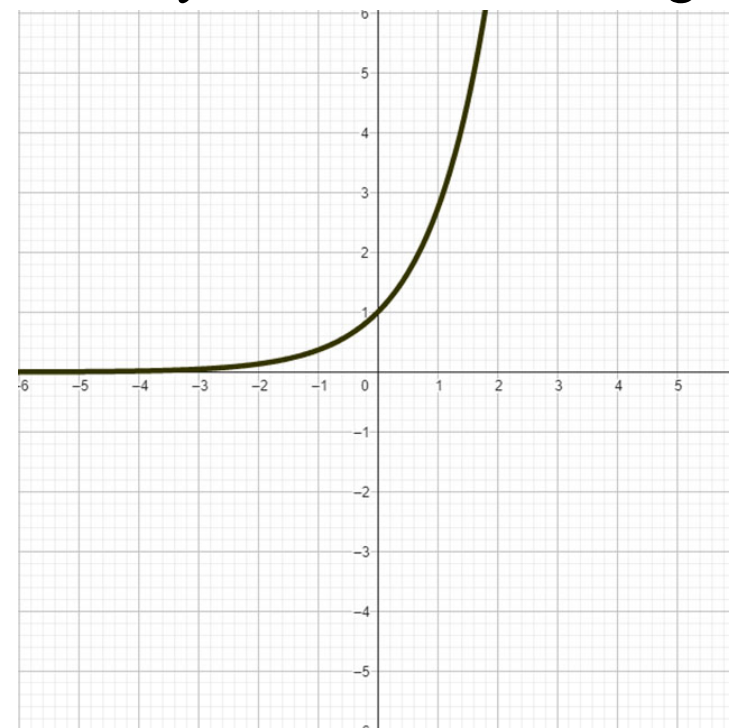
Identify the function of the graph.



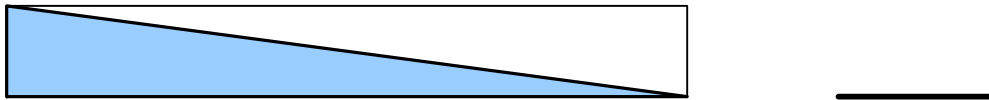
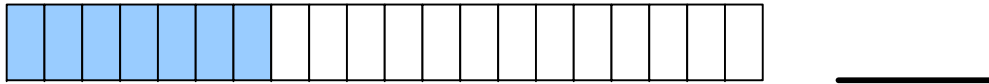
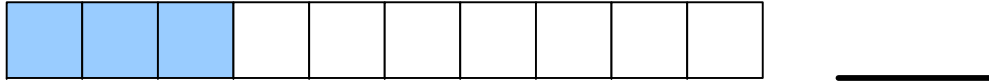
Identify the function of the graph.



Identify the function of the graph.



What fraction is shaded blue?



Convert the following to decimals and percentages.

$$\frac{8}{10} =$$

$$\frac{3}{5} =$$

What is $\frac{3}{5}$ of 60?

Give the answer to the following in its simplest form.

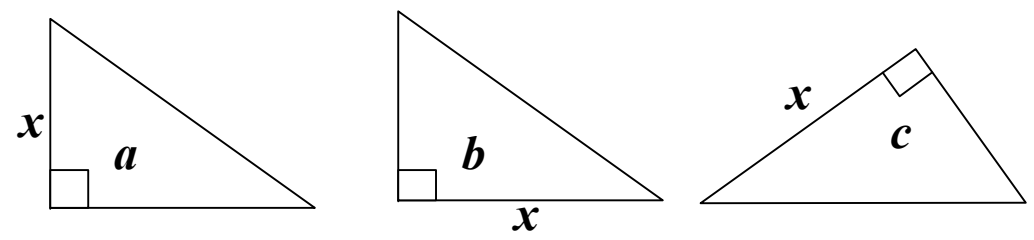
$$\frac{8}{10} \times \frac{5}{12} =$$

Find the value of the following:

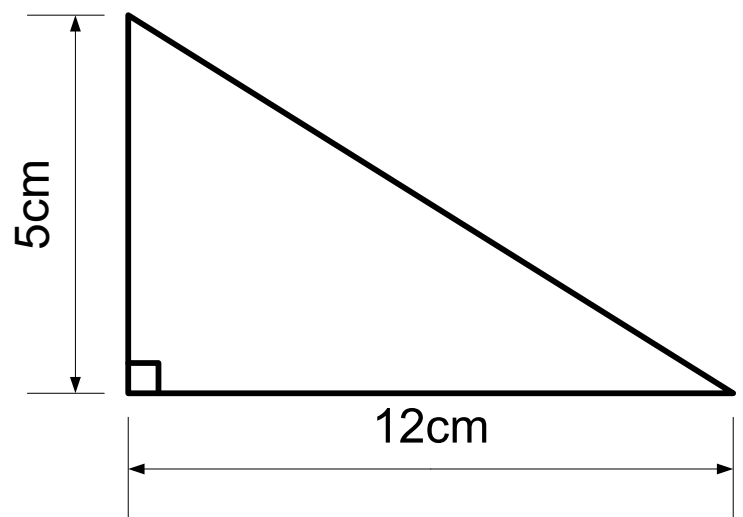
$$\begin{array}{ll} 5^2 = & 8^2 = \\ 14^2 = & 4^2 = \\ 12^2 = & 13^2 = \end{array}$$

Which equation do we use to work out the length of side x?

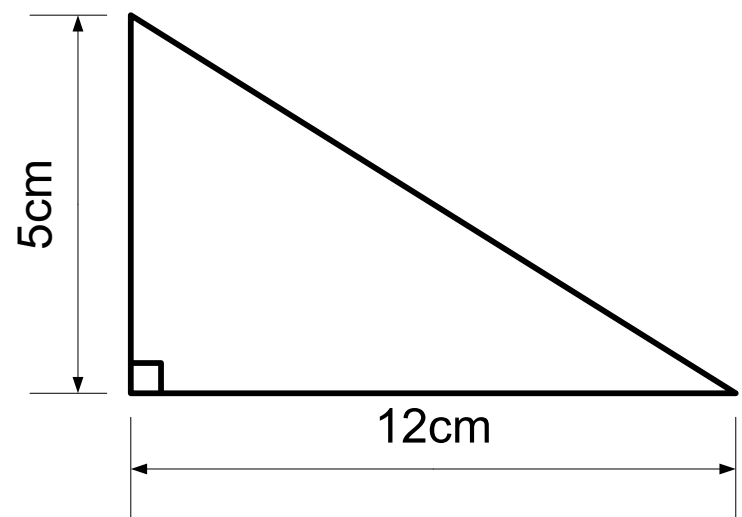
$$\begin{array}{l} x = \sqrt{a^2 + b^2} \\ x = \sqrt{c^2 - b^2} \end{array}$$



Find the length of the missing side.



Find the perimeter of this triangle.



How many parts has the following
been split into?

4:5:7 _____ parts

8:7:9:4 _____ parts

Bill and Joanne share £96 in the
proportion 3:5. How much is one
part worth?

Write the following ratios as fractions
in their simplest form.

12:15:18

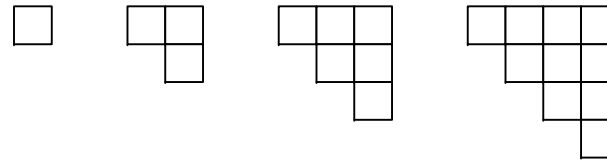
Put the ratio 5:11 in the form 1:n.

Fill in the table for the co-ordinates
for $y=12 - 2x$ for $-3 \leq x \leq 5$

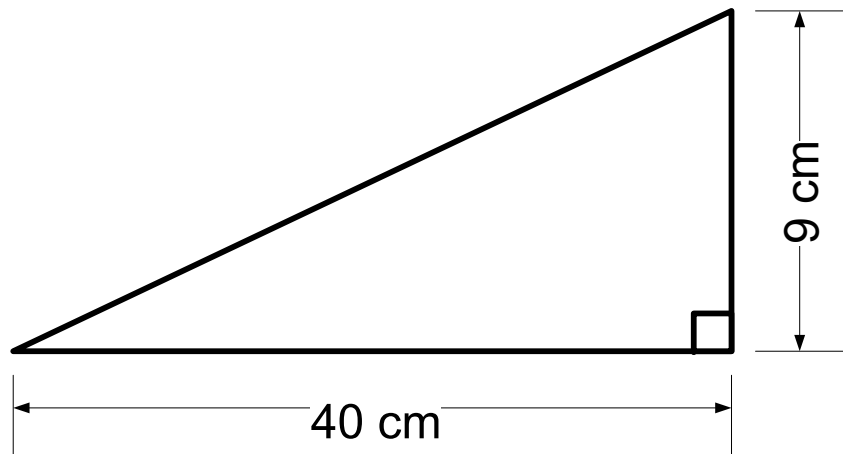
x	-3	-2	-1	0	1	2	3	4	5
y	18				10				2

Give the coordinates
of the y intercept. (\quad, \quad)

Look at the pattern made from the
squares.



Which pattern has 28 squares?



What is the perimeter of the triangle?

$$\frac{7}{12} \div \frac{2}{7} =$$

$$\frac{7}{12} \times \frac{2}{7} =$$

$$\frac{7}{12} + \frac{2}{7} =$$

$$\frac{7}{12} - \frac{2}{7} =$$

How many parts has the following
been split into?

3:7:10 _____ parts

4:3:4:5 _____ parts

Jack and James share £90 in the
proportion 4:11. How much is one
part worth?

Write the following ratios as fractions
in their simplest form.

25:30:45

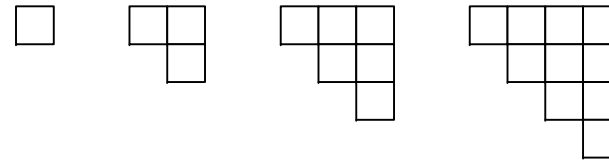
Put the ratio 8:30 in the form 1:n.

Fill in the table for the co-ordinates
for $y=2x-5$ for $-3 \leq x \leq 5$

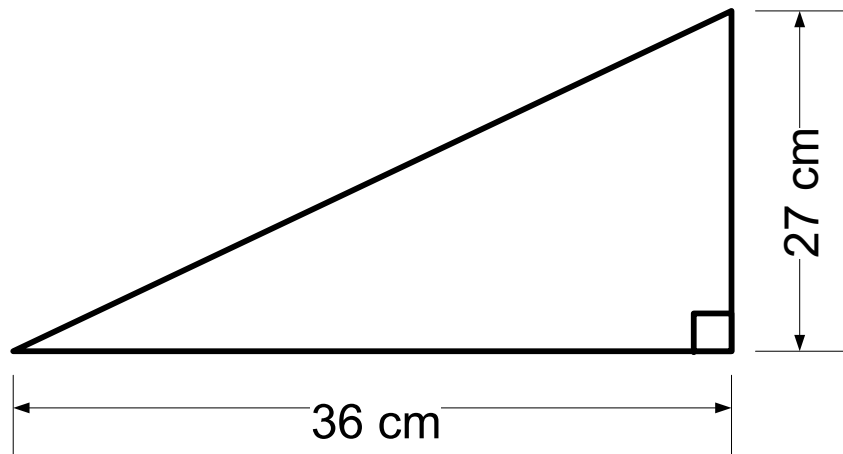
x	-3	-2	-1	0	1	2	3	4	5
y	-11				-3				5

Give the coordinates
of the y intercept. (\quad, \quad)

Look at the pattern made from the
squares.



How many squares will be in
pattern 12?



What is the perimeter of the triangle?

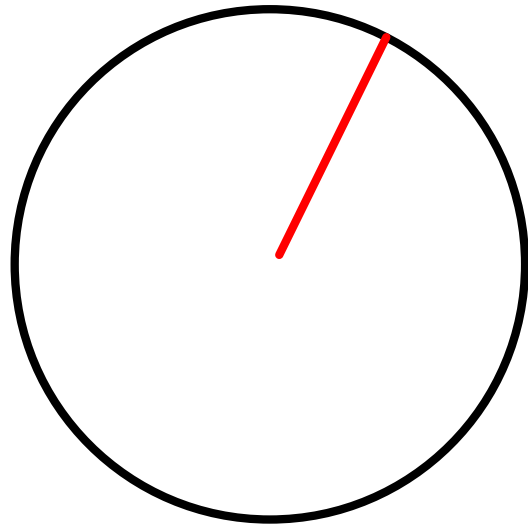
$$\frac{7}{10} \div \frac{2}{5} =$$

$$\frac{7}{10} \times \frac{2}{5} =$$

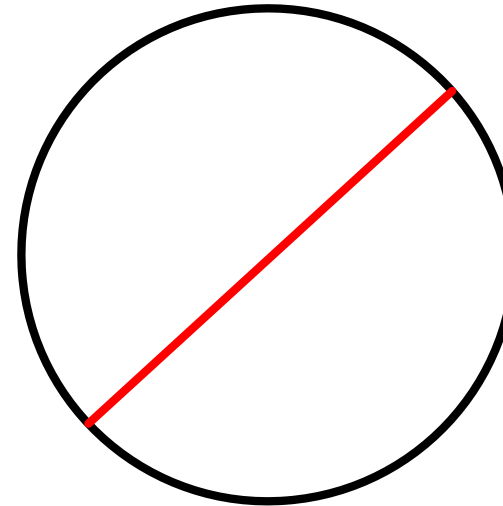
$$\frac{7}{10} + \frac{2}{5} =$$

$$\frac{7}{10} - \frac{2}{5} =$$

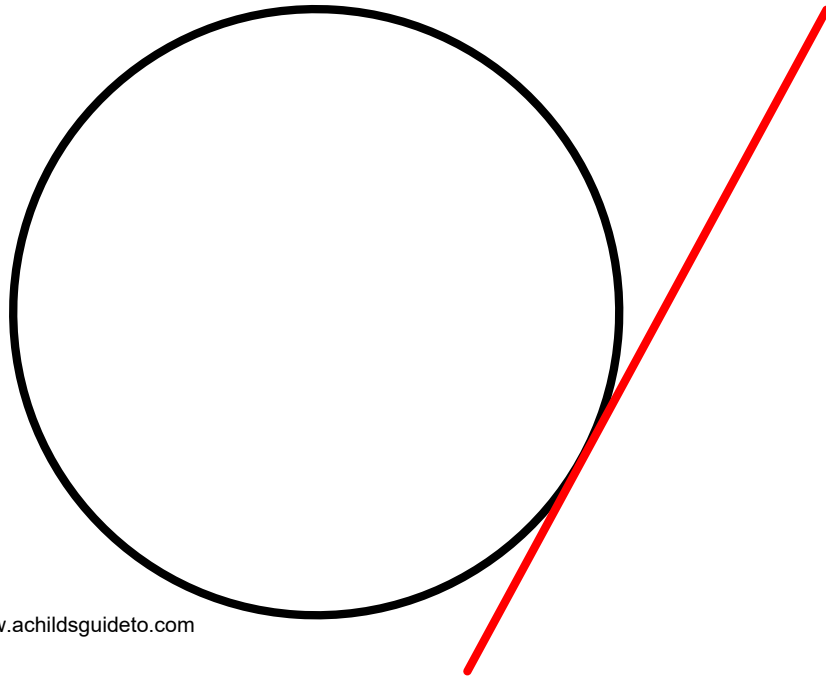
Identify the red part of the circle.



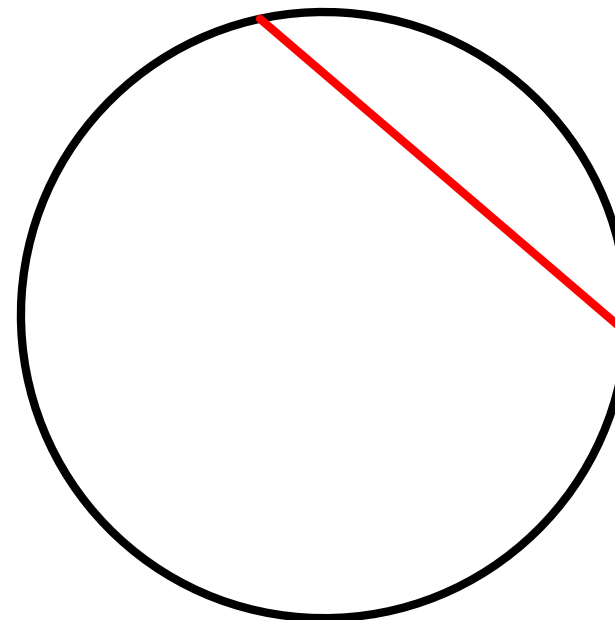
Identify the red part of the circle.



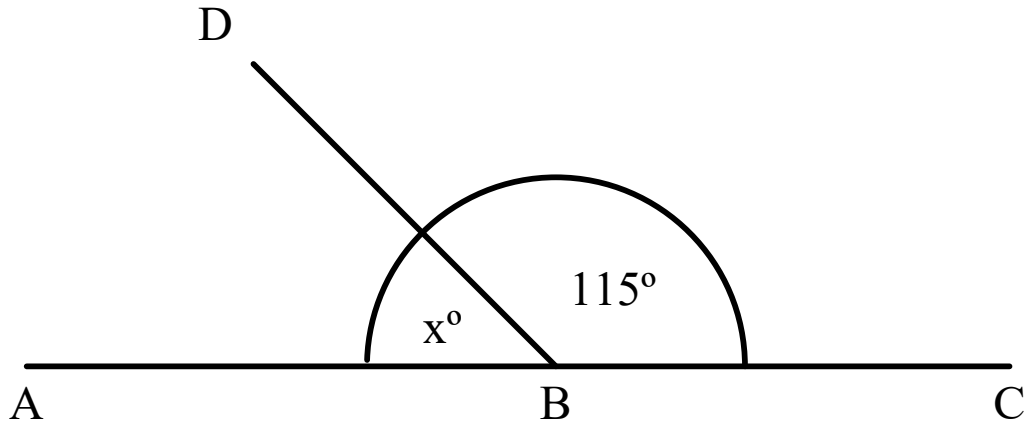
Identify the red part of the circle.



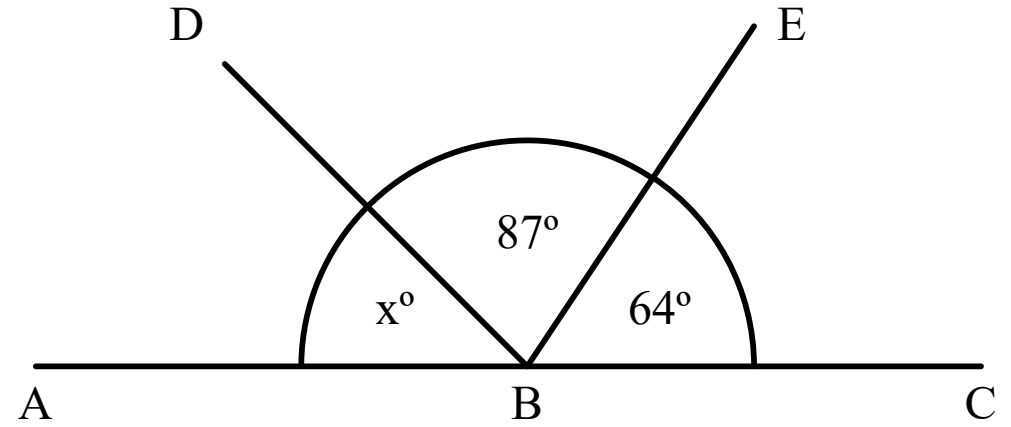
Identify the red part of the circle.



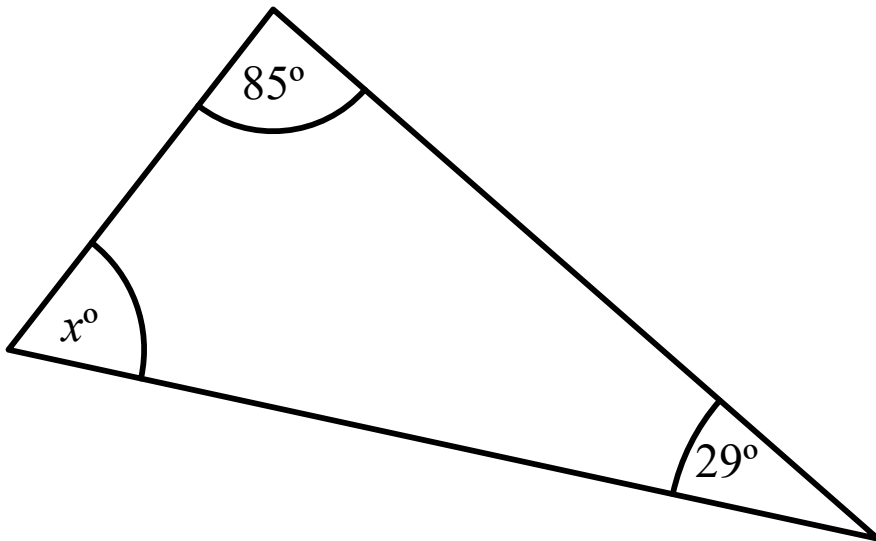
ABC is a straight line. Find the value of x.



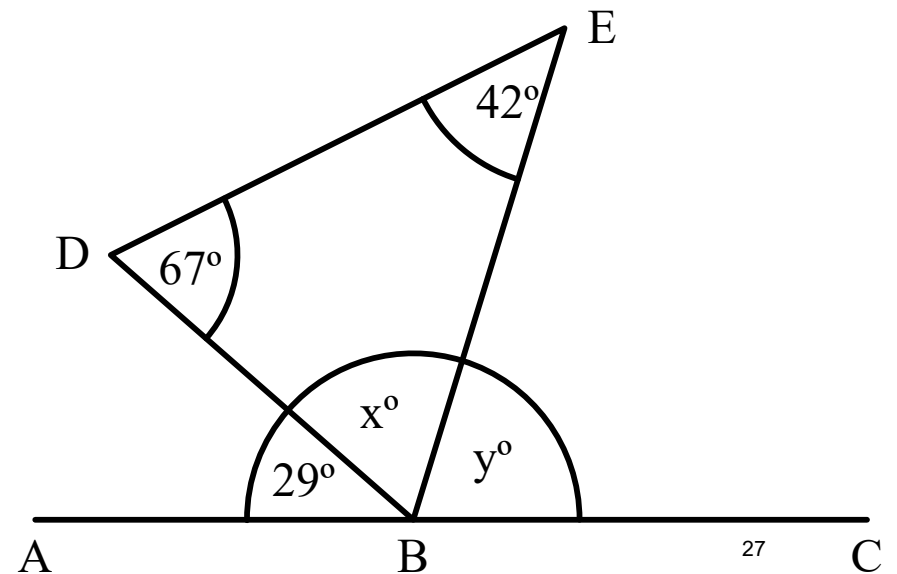
ABC is a straight line. Find the value of x.



ABC is a triangle. Find the value of x.



ABC is a straight line. BDE is a triangle.
Find the values of x and y.



Into how many parts has the following been split?

4:6:9 _____ parts

44:66:99 _____ parts

Jack, Joan and James share 190 sweets in the proportion 4:6:9. How much is one part worth?

Bill, Freda and Francesca have split a food bill in the following ratio.

4:6:9

What fraction of the bill does Freda pay?

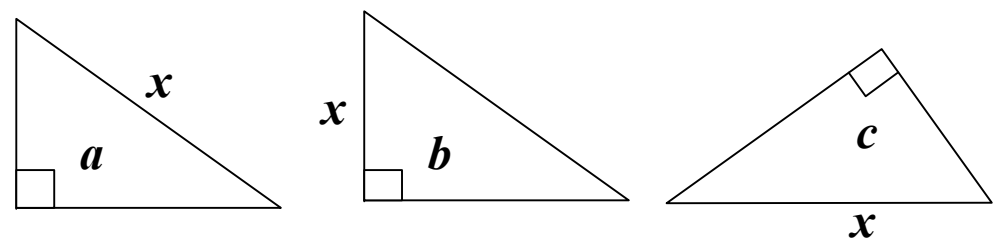
Mary Mungo and Midge share a house. They each pay rent in the proportion to 4:6:9. The total rent is £380. How much do each of them pay?

Find the value of the following:

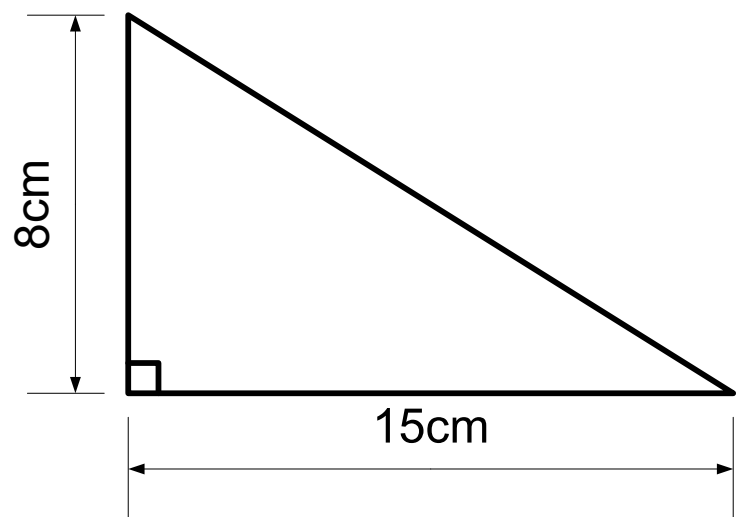
$$\begin{array}{ll} 8^2 = & 6^2 = \\ 15^2 = & 9^2 = \\ 10^2 = & 17^2 = \end{array}$$

Which equation do we use to work out the length of side x ?

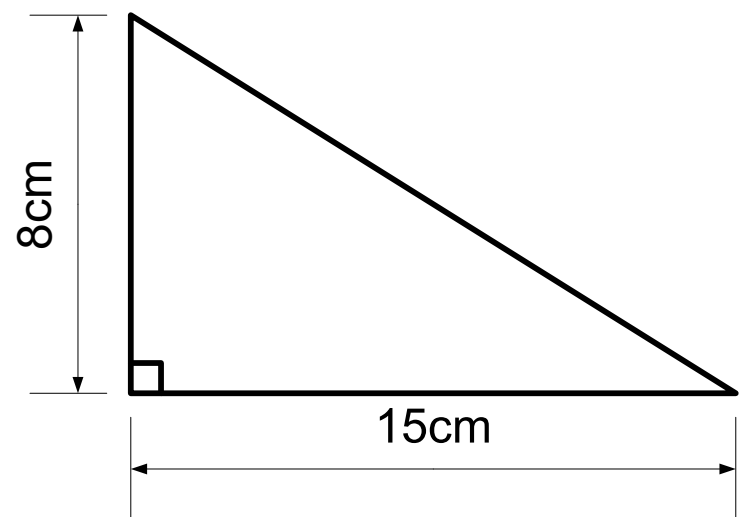
$$\begin{array}{l} x = \sqrt{a^2 + b^2} \\ x = \sqrt{c^2 - b^2} \end{array}$$



Find the length of the missing side.



Find the perimeter of this triangle.



Fill the table in for $y=6x+8$ for $-3 \leq x \leq 7$

x	-3	-2	-1	0	1	2	3	4	5	6	7
y			2							44	

Write 150 as a product of its prime factors.

Expand the following:

$$4(7x - 5)$$

$$3x(8x + 6)$$

$$\begin{array}{r|l|l} & 7x & -5 \\ \hline 4 & & \end{array}$$

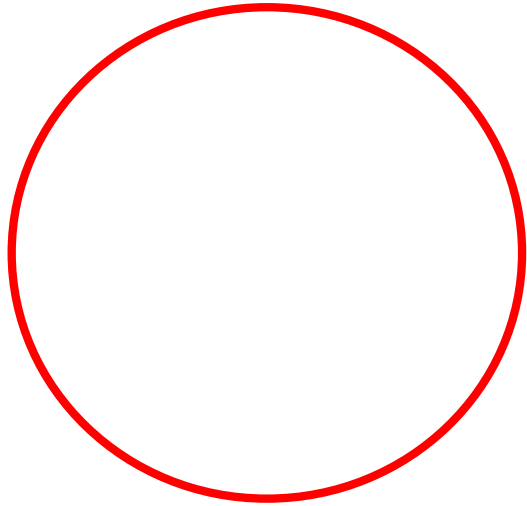
$$\begin{array}{r|l|l} & 8x & +6 \\ \hline 3x & & \end{array}$$

Factorise the following

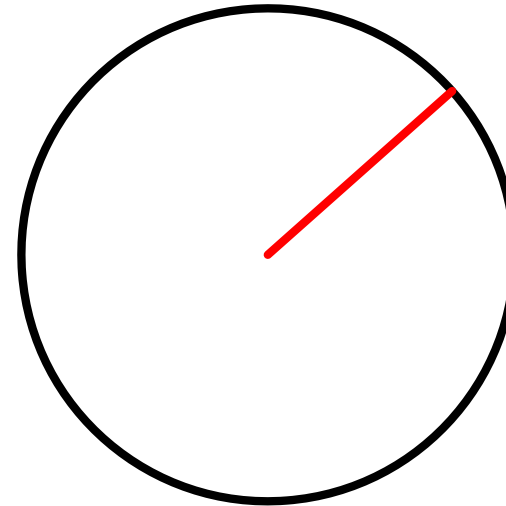
$$24x + 36$$

$$\underline{\hspace{1cm}} (\underline{\hspace{2cm}})$$

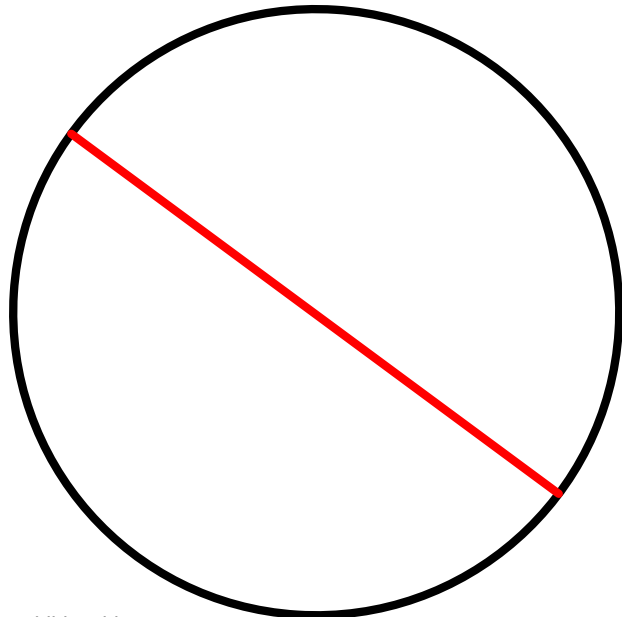
Identify the red part of the circle.



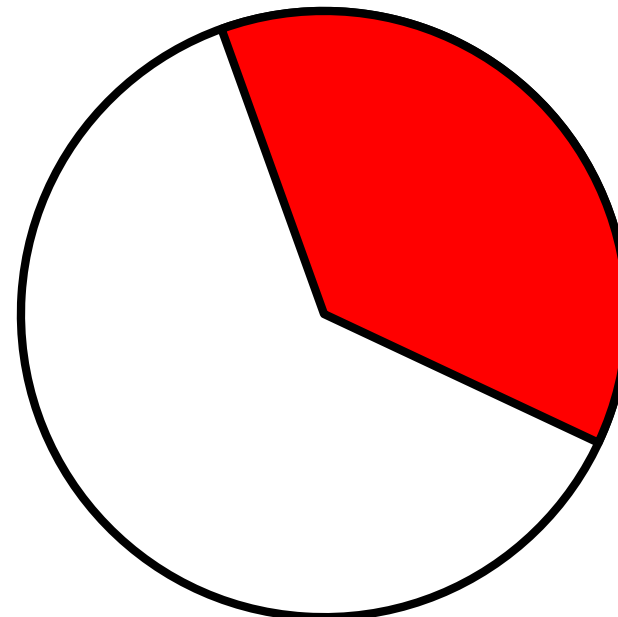
Identify the red part of the circle.



Identify the red part of the circle.



Identify the red part of the circle.

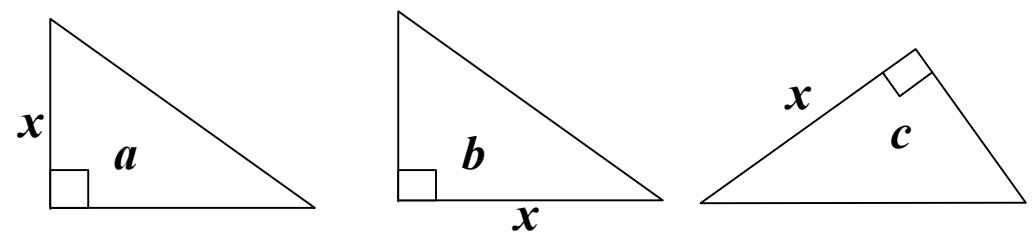


Find the value of the following:

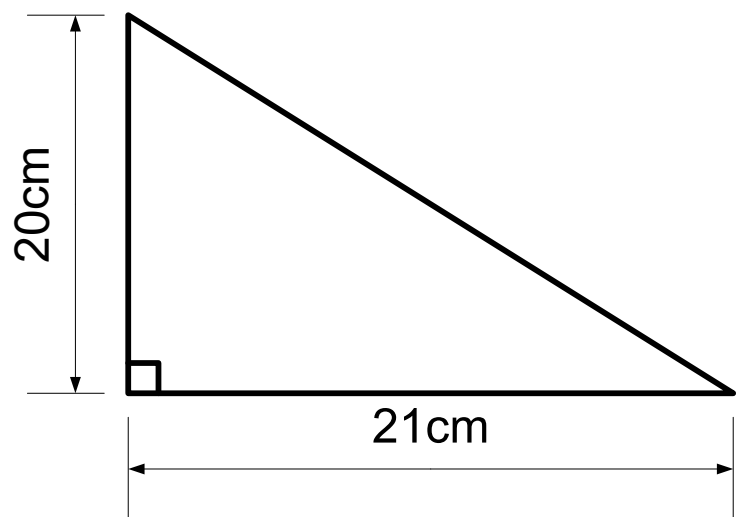
$7^2 =$	$29^2 =$
$11^2 =$	$21^2 =$
$20^2 =$	$16^2 =$

Which equation do we use to work out the length of side x?

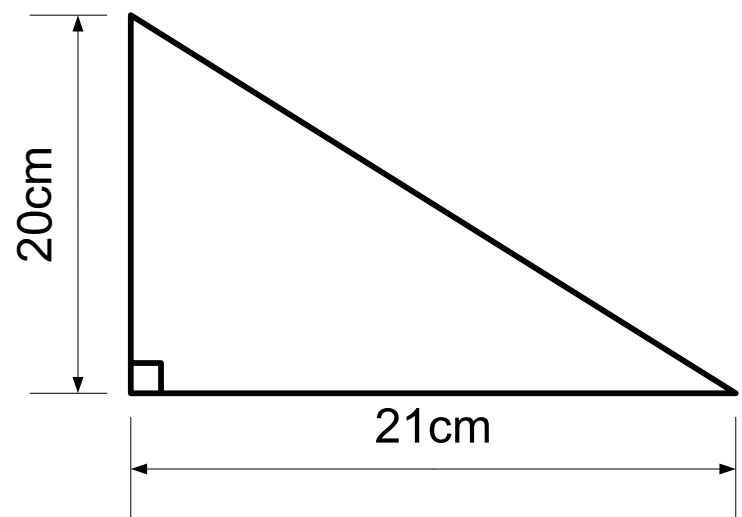
$$x = \sqrt{a^2 + b^2}$$
$$x = \sqrt{c^2 - b^2}$$



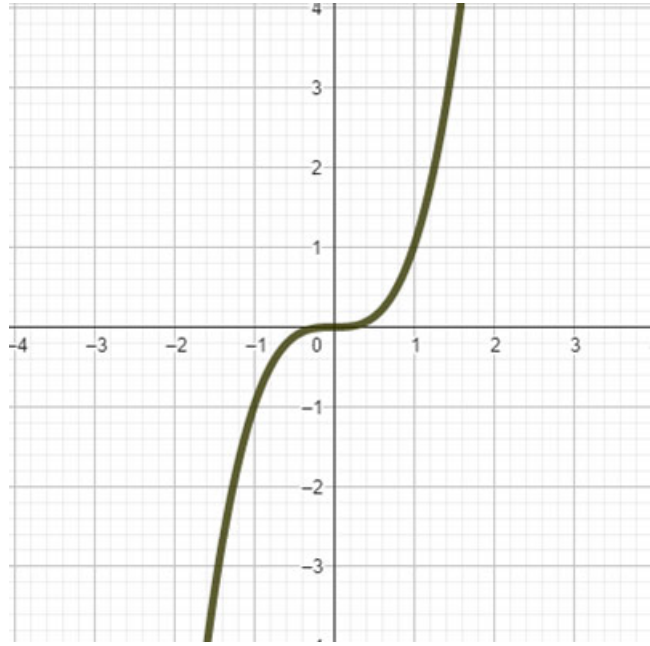
Find the length of the missing side.



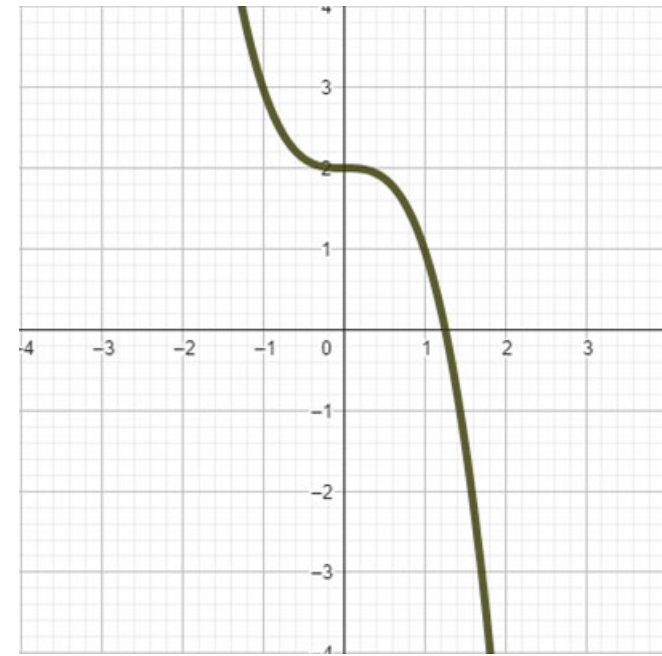
Find the perimeter of this triangle.



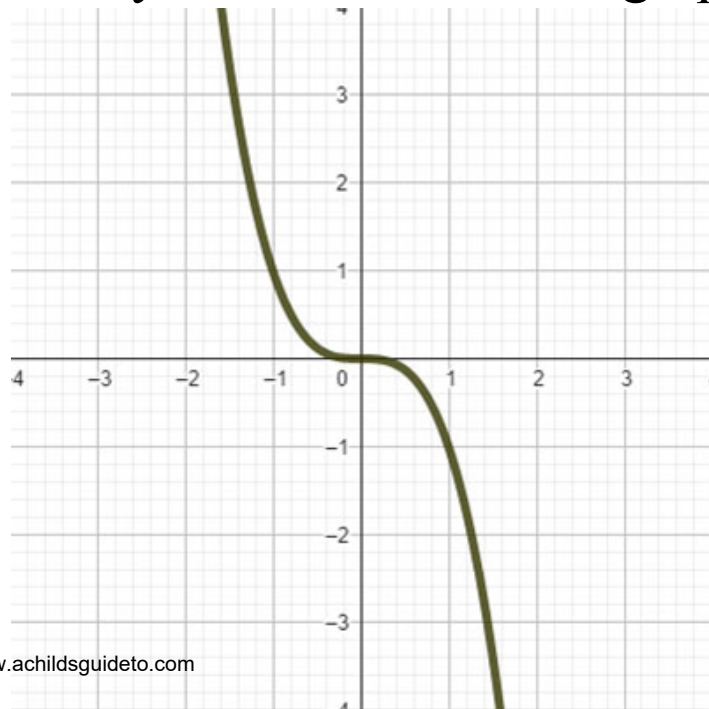
Identify the function of the graph.



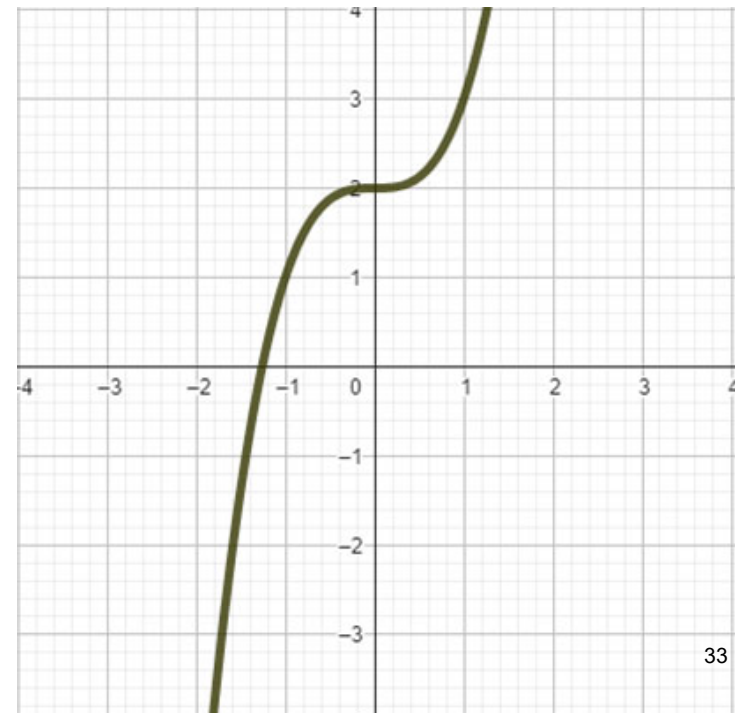
Identify the function of the graph.



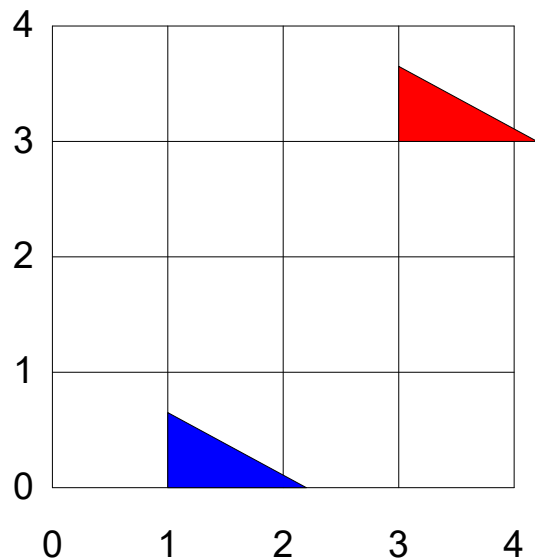
Identify the function of the graph.



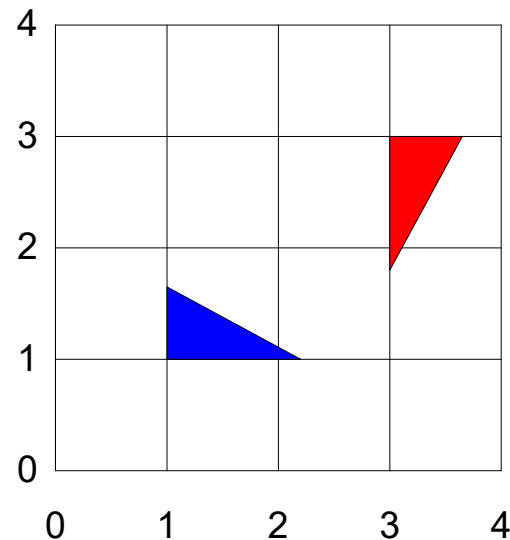
Identify the function of the graph.



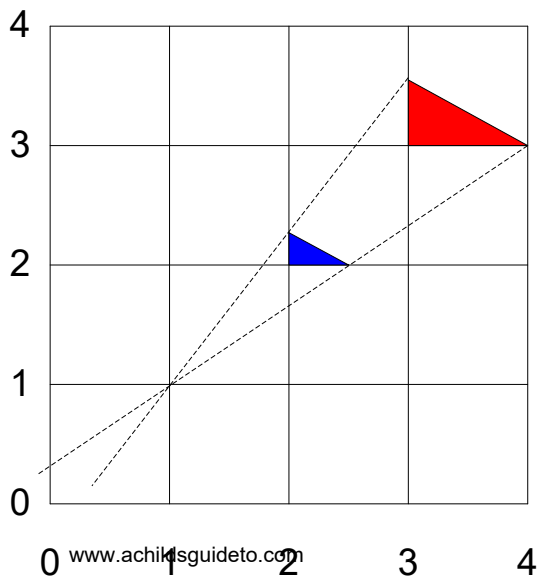
Describe fully the single transformation shown below.



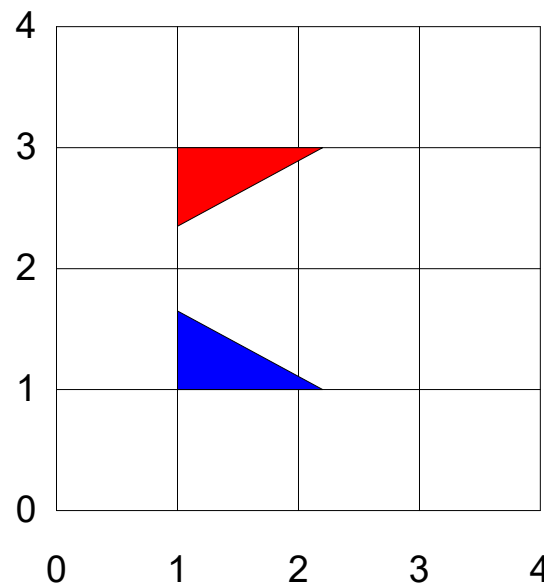
Describe fully the single transformation shown below.



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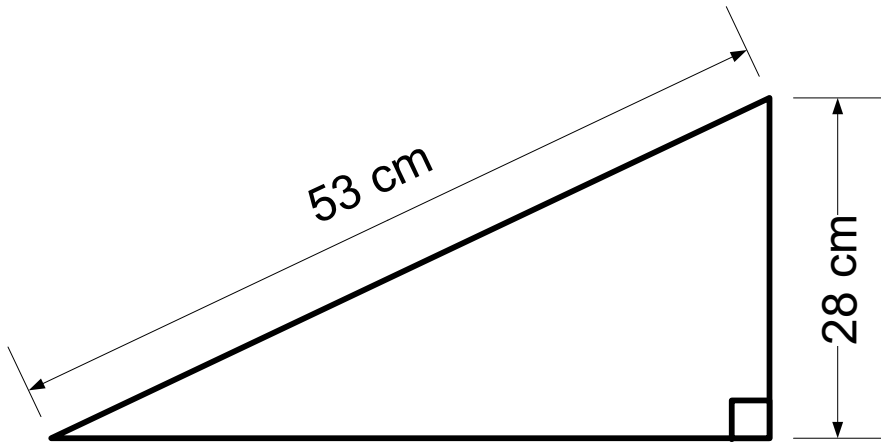


Pay is calculated using the following rule:

Pay = Basic Pay + 30p for each item made

Ian's basic pay was £140 per week.

**Ian made 340 items in the week.
How much was he paid?**



What is the area of the triangle?

**Here are some numbers in an
geometric sequence.**

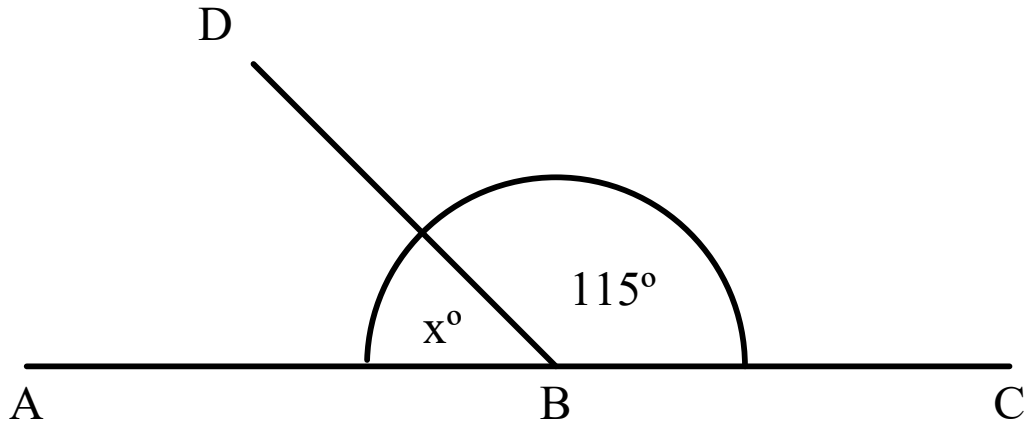
2, 6, 18, 54, ..., ..., ...

**Write down the next three numbers
in the sequence.**

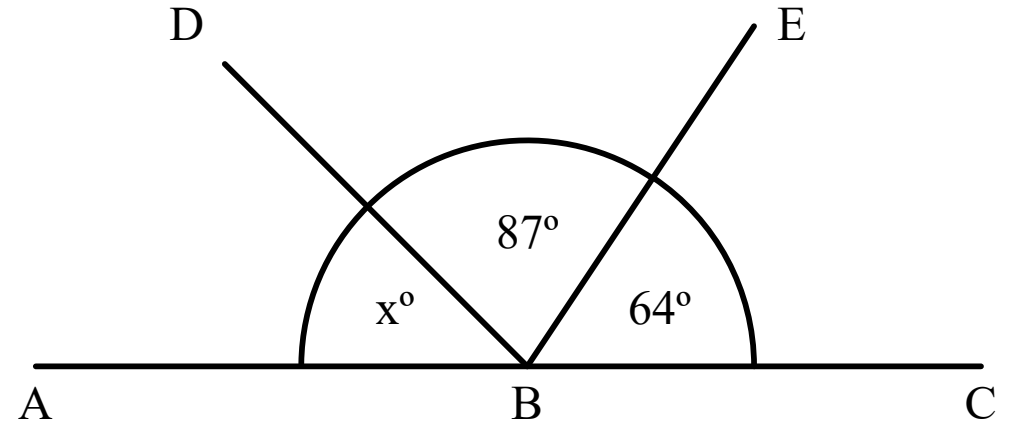
Put these numbers into order.

$\frac{8}{11}$ 80% 0.72 $\frac{3}{4}$ 0.802802

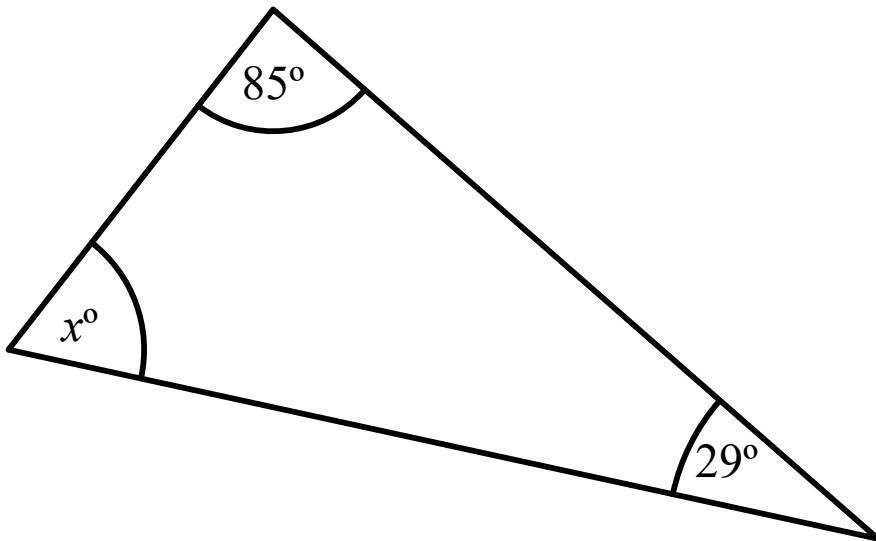
ABC is a straight line. Find the value of x.



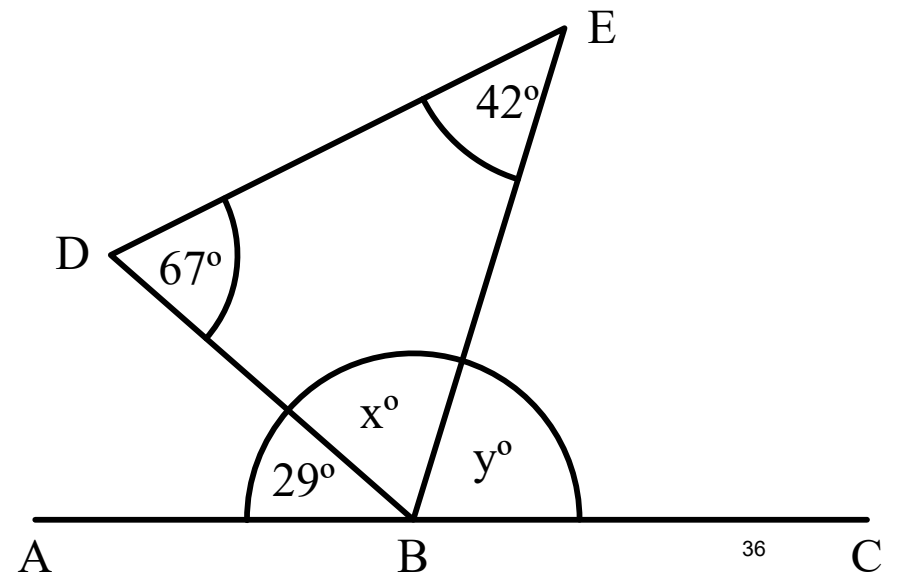
ABC is a straight line. Find the value of x.



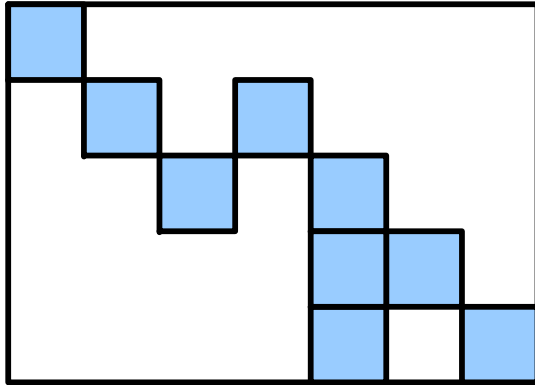
ABC is a triangle. Find the value of x.



ABC is a straight line. BDE is a triangle. Find the values of x and y.



What fraction is shaded blue?



Convert the following to decimals and percentages.

$$\frac{7}{20} =$$

$$\frac{17}{50} =$$

What is $\frac{3}{4}$ of 240?

Give the answer to the following in its simplest form.

$$\frac{8}{11} \div \frac{16}{66} =$$

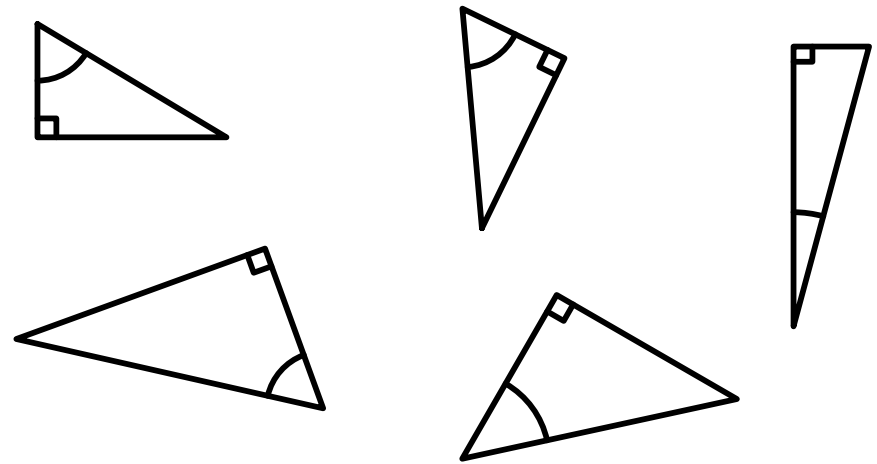
Copy and complete the sentence.

Some _____

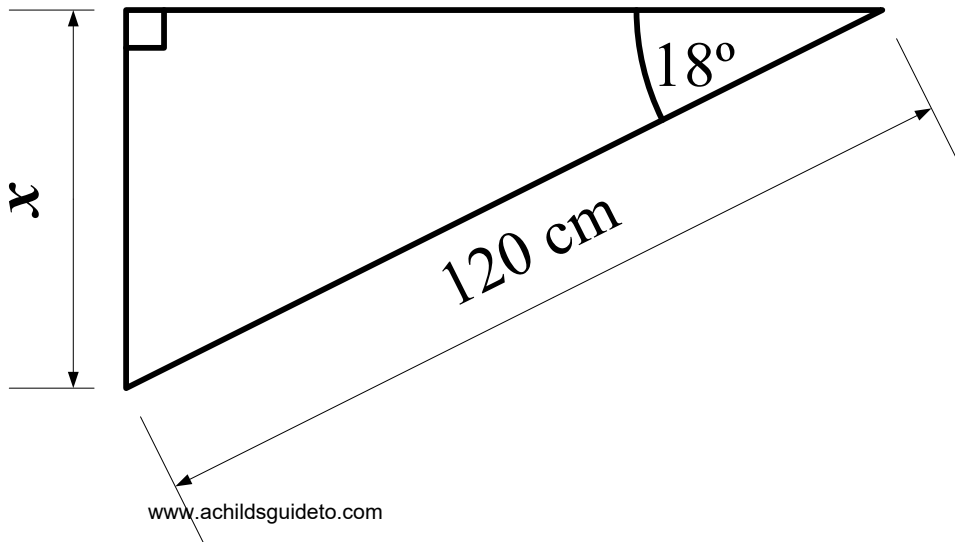
Curley Auburn _____

'Til _____

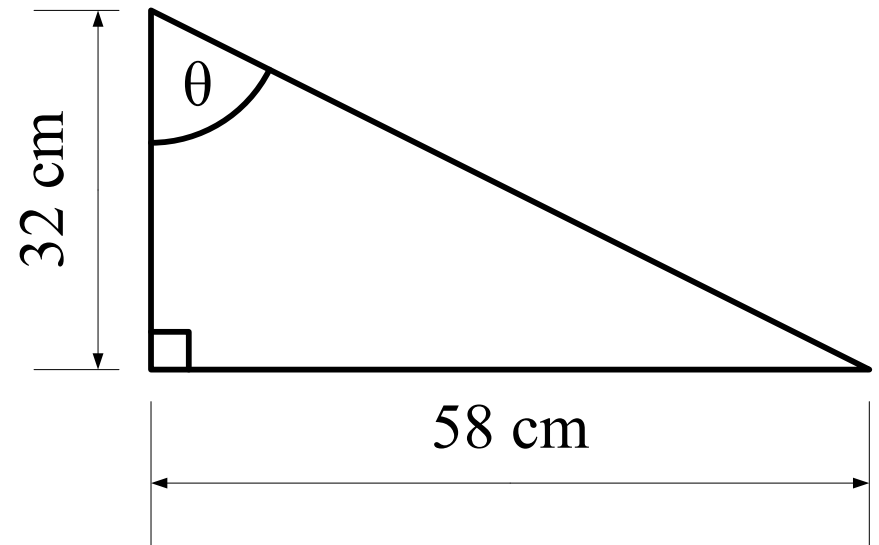
Label the sides in relation to the shown angle.



Calculate the length of side x .



Calculate the size of angle θ .



Fill the table in for $y=9 - 2x$ for $-3 \leq x \leq 7$

x	-3	-2	-1	0	1	2	3	4	5	6	7
y			11								-5

Write 84 as a product of its prime factors.

Expand the following:

$$-8(3x - 4)$$

-8	3x	-4

$$6x(7x + 9)$$

6x	7x	+9

Factorise the following

$$8m + 6mn$$

$$\underline{\hspace{2cm}} (\underline{\hspace{2cm}})$$

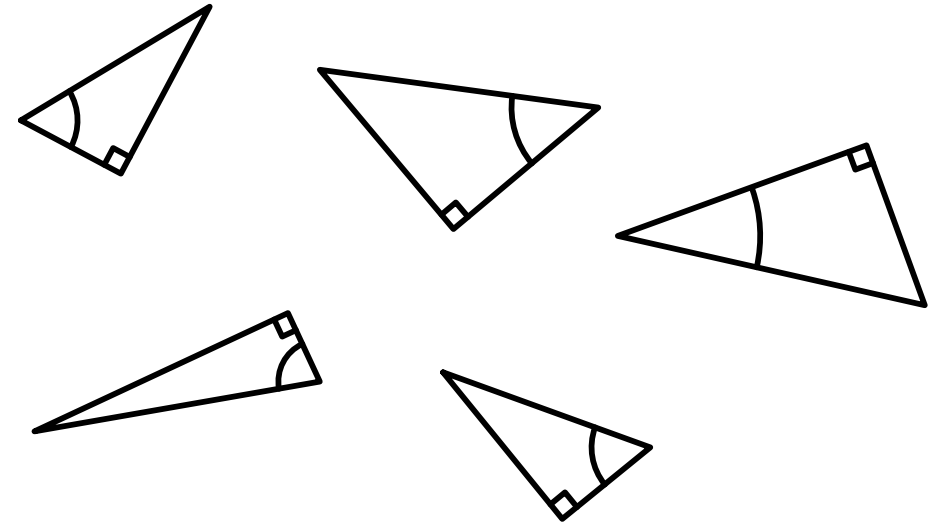
Copy and complete the equations

$$\sin \theta = \underline{\hspace{2cm}}$$

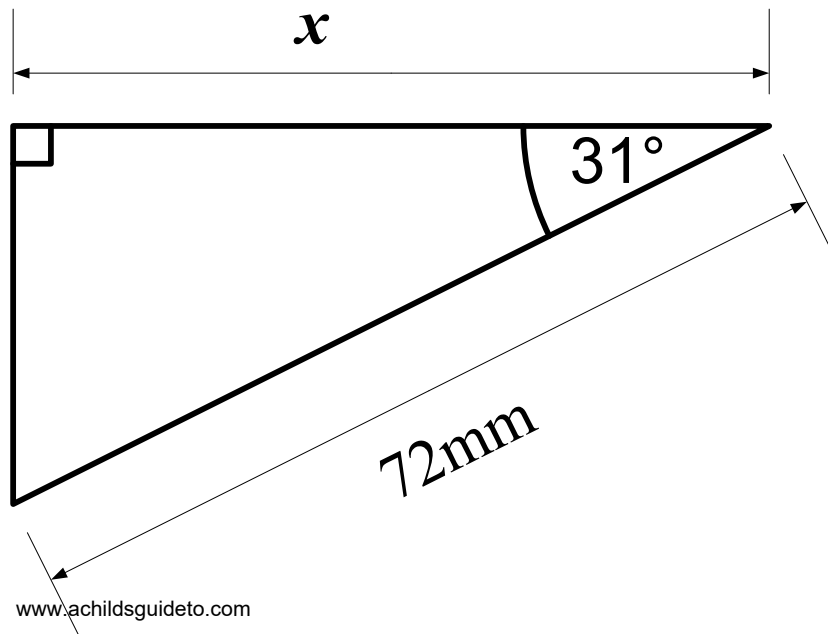
$$\cos \theta = \underline{\hspace{2cm}}$$

$$\tan \theta = \underline{\hspace{2cm}}$$

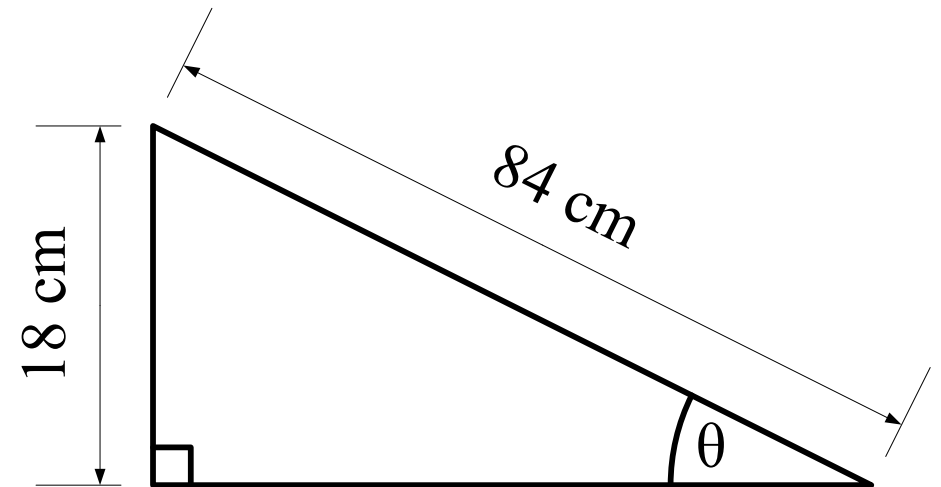
Label the sides in relation to the shown angle.



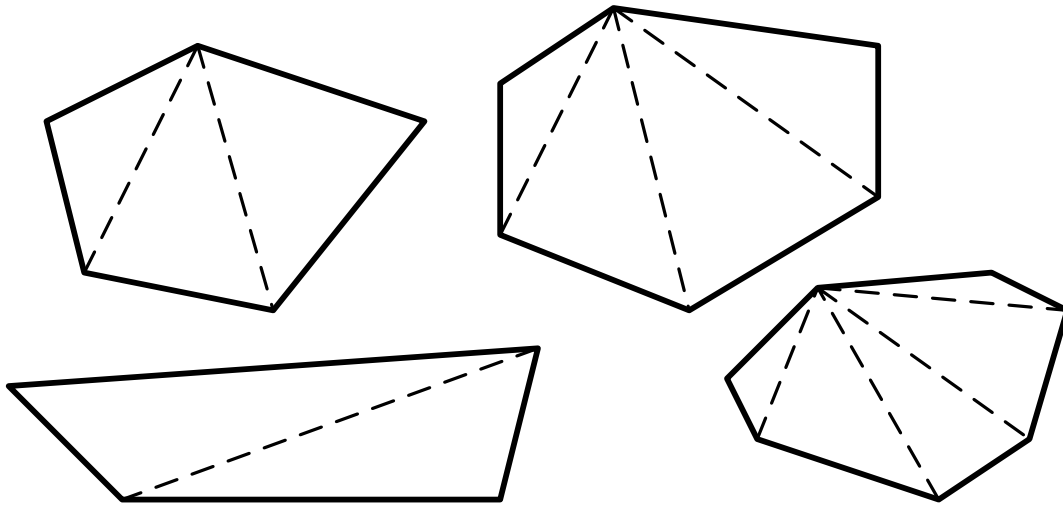
Calculate the length of side x .



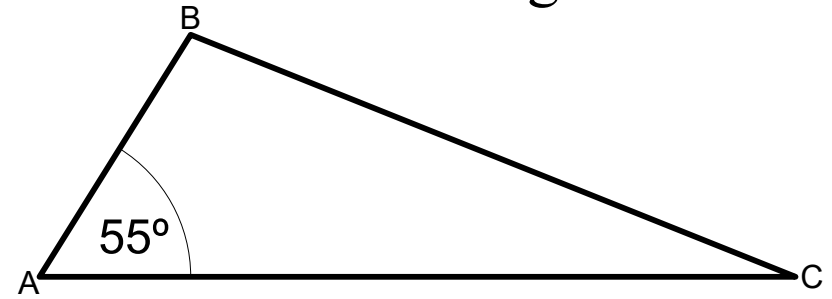
Calculate the size of angle θ .



Name the shape and say how many triangles are in each one.



Write an equation to find the value of each angle.

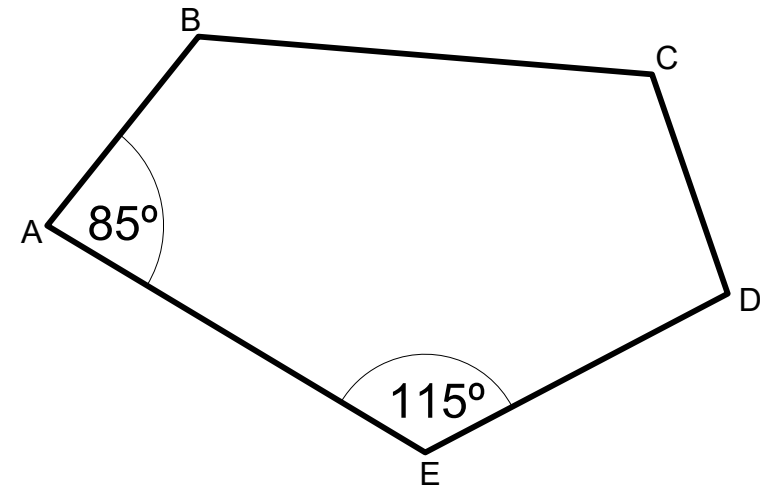


Angle ABC is three times the size of angle BCA.

Fill in the following table:

Number of sides	Number of triangles	Number of degrees
4	___ × 180	_____
5	___ × 180	_____
6	___ × 180	_____
7	___ × 180	_____
23	___ × 180	_____

Find the size of each angle.

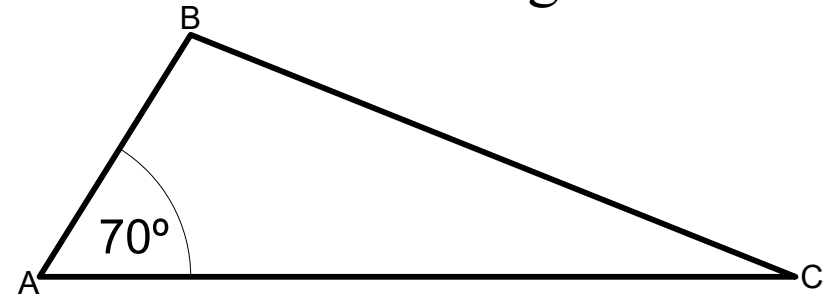


Angle ABC is 12 degrees greater than angle CDE.
Angle BCD is twice as large as angle CDE.

David has x pencils in his pencil case.
Aimee has 12 more pencils than David.

Write an expression for the total
number of pencils in Aimee's pencil
case.

Write an equation to find the value of
each angle.



Angle ABC is thirty degrees larger than angle BCA.

Billy, Danielle and Joanne went for a meal.

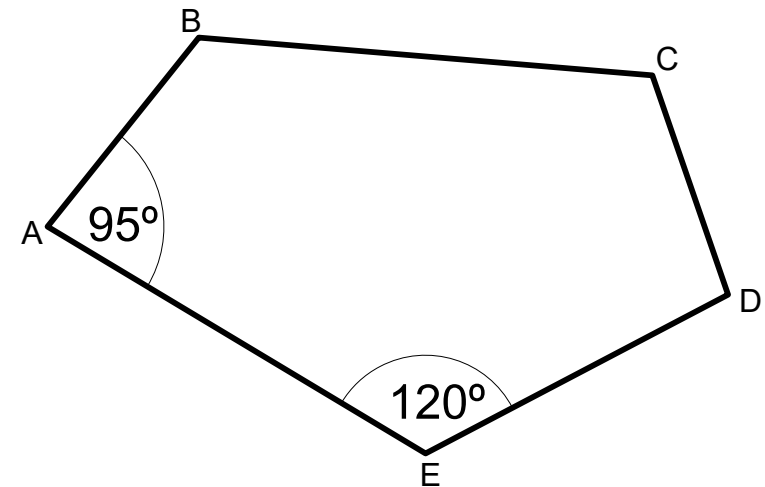
Billy's meal cost w pounds.

Danielle's meal was £15 less than Billy's
meal.

Joanne's meal was £17 more than Danielle's
meal.

Write an expression for the total cost of the
meal.

Find the size of each angle.



Angle ABC is 20 degrees greater than angle CDE.

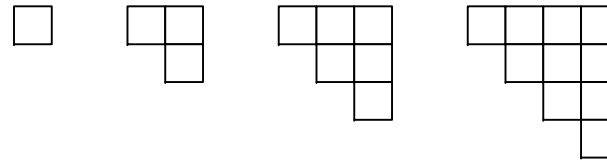
Angle BCD is twice as large as angle CDE.

Fill in the table for the co-ordinates for $y=3x+5$ for $-3 \leq x \leq 5$

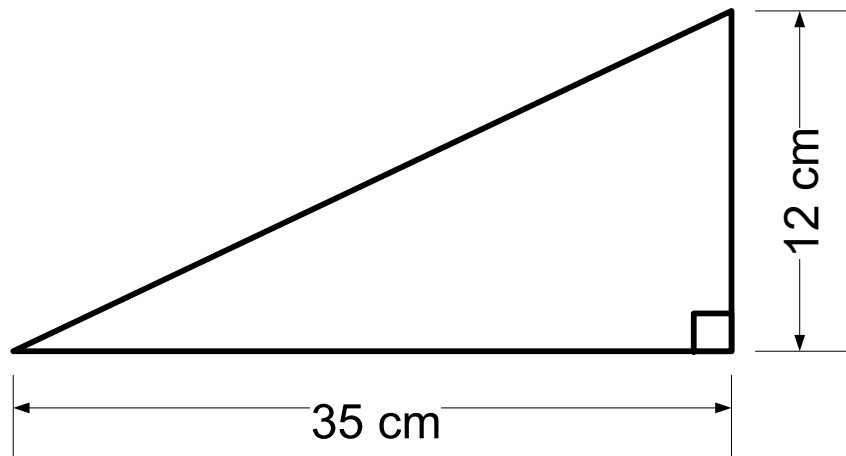
x	-3	-2	-1	0	1	2	3	4	5
y	-4				8				20

Give the coordinates of the y intercept. (\quad, \quad)

Look at the pattern made from the squares.



How many squares will be in pattern 8?



What is the perimeter of the triangle?

$$\frac{3}{4} \div \frac{5}{6} =$$

$$\frac{3}{4} \times \frac{5}{6} =$$

$$\frac{3}{4} + \frac{5}{6} =$$

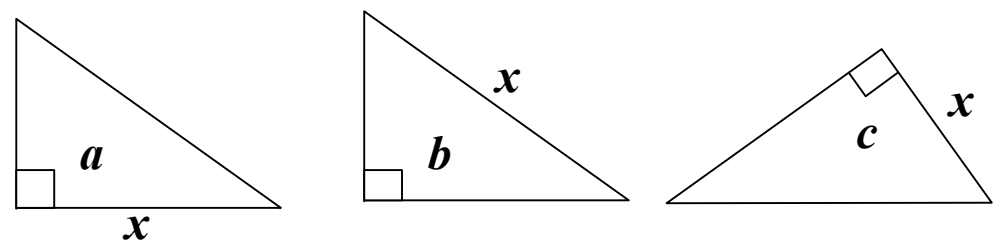
$$\frac{5}{6} - \frac{3}{4} =$$

Find the value of the following:

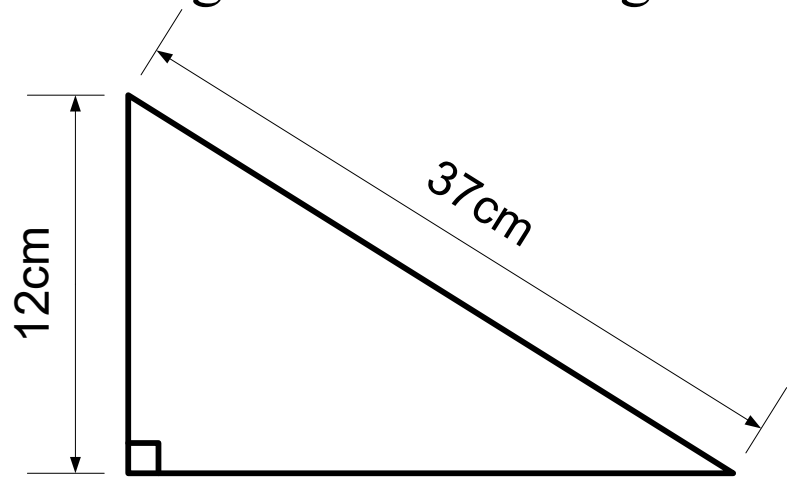
$5^2 =$	$37^2 =$
$16^2 =$	$39^2 =$
$12^2 =$	$35^2 =$

Which equation do we use to work out the length of side x ?

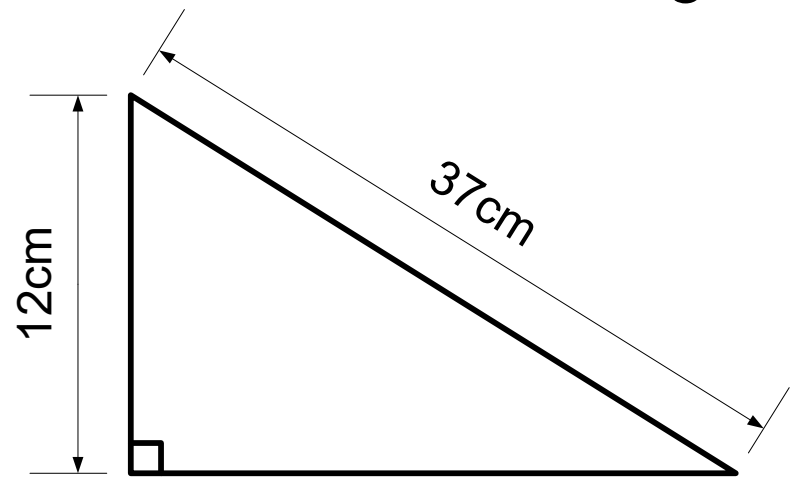
$$x = \sqrt{a^2 + b^2}$$
$$x = \sqrt{c^2 - b^2}$$



Find the length of the missing side.



Find the area of this triangle.

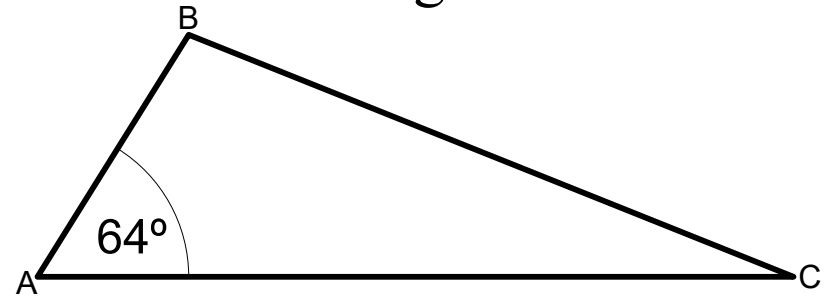


David has x pencils in his pencil case.

Aimee has 12 more pencils than David.

Write an expression for the total number of pencils in their pencil cases.

Find the size of each angle in the triangle ABC.



Angle ABC is four times the size of angle BCA.

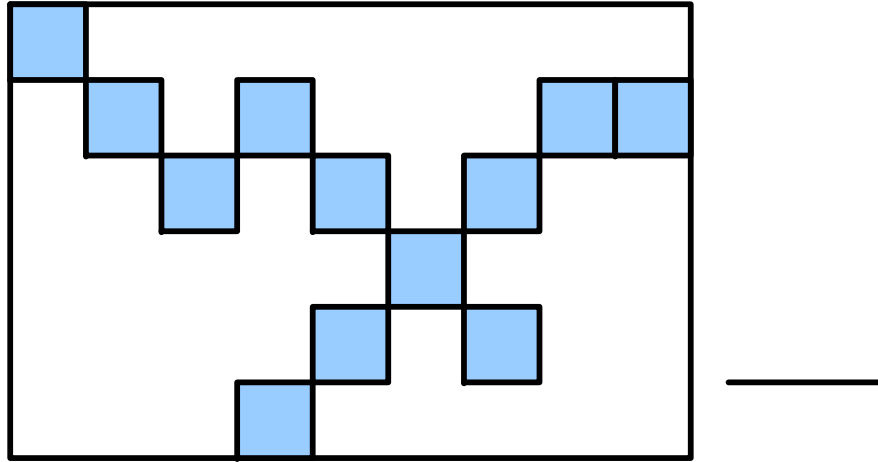
Diana has d number of sweets.
Ethan has 7 more sweets than Diana.
Jamie has twice as many sweets as Ethan.

Write an expression for the total number of sweets that the three people have.

Billy has p pounds.
Sean has 12 pounds more than Billy.
Charlie has three times as much money as Sean.

Find an expression for the mean average amount of money that each person has.

What fraction is shaded blue?



Convert the following to decimals and percentages.

$$\frac{7}{25} =$$

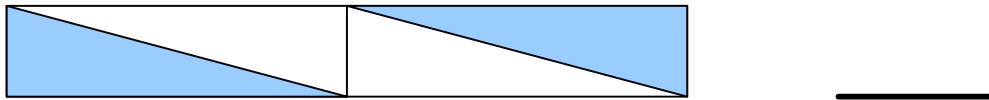
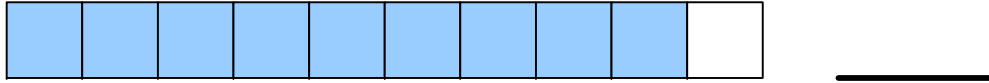
$$\frac{27}{50} =$$

What is $\frac{3}{8}$ of 240?

Give the answer to the following in its simplest form.

$$\frac{7}{18} \div \frac{28}{45} =$$

What fraction is shaded blue?



Convert the following to decimals and percentages.

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

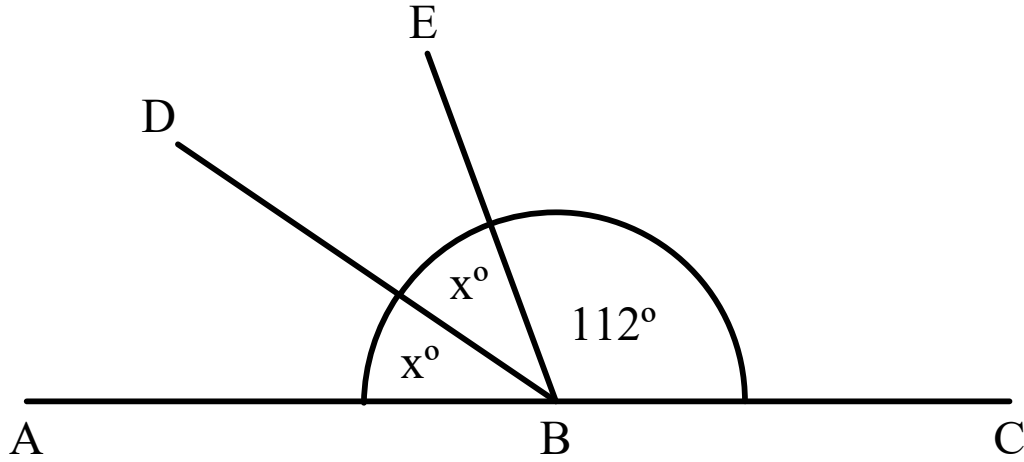
$$\frac{2}{5} =$$

What is $\frac{2}{5}$ of 20?

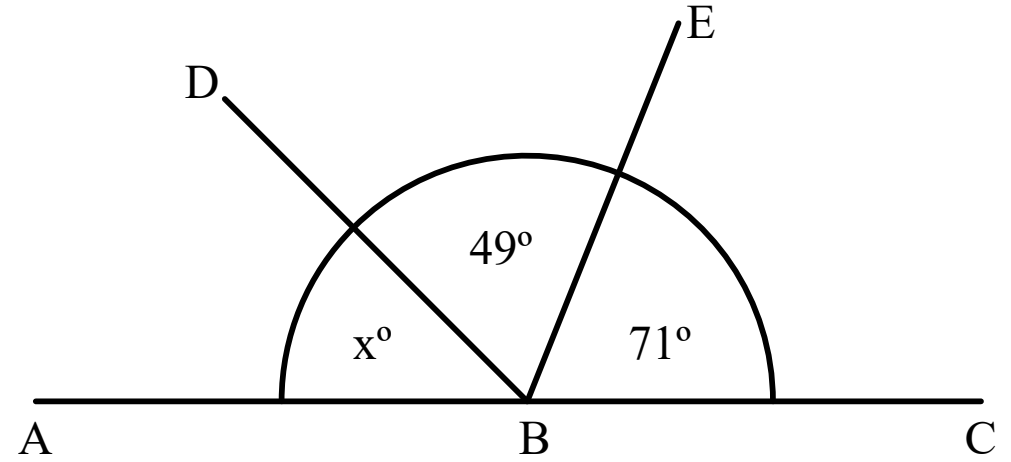
Give the answer to the following in its simplest form.

$$\frac{8}{11} \times \frac{44}{60} =$$

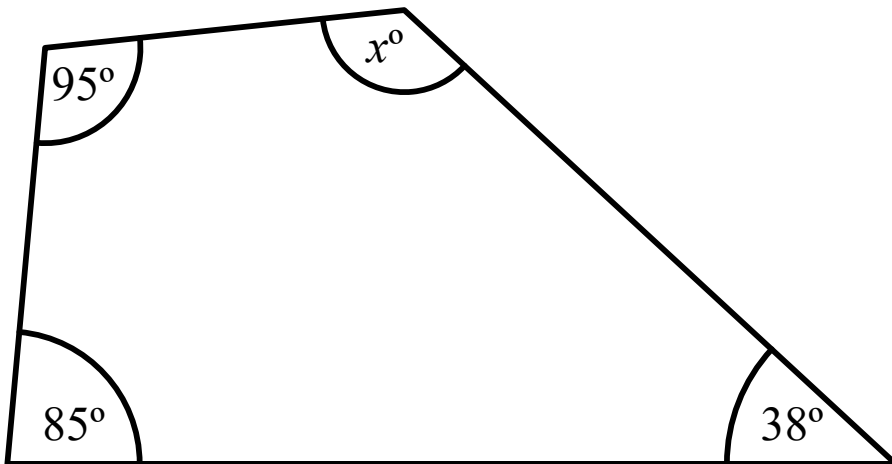
ABC is a straight line. Find the value of x.



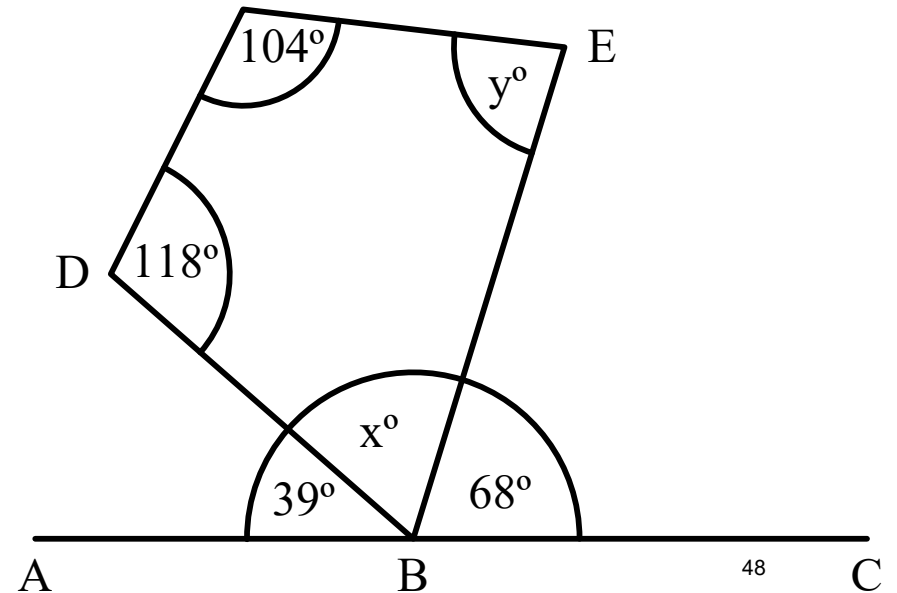
ABC is a straight line. Find the value of x.



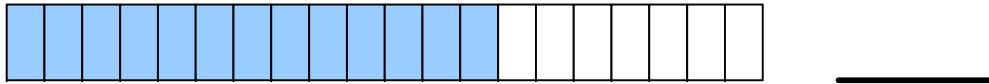
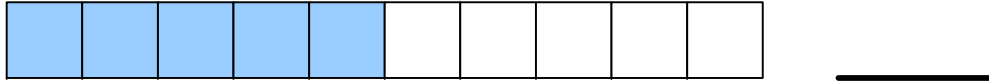
ABC is a quadrilateral. Find the value of x.



ABC is a straight line. BDE is a triangle.
Find the values of x and y.



What fraction is shaded blue?



Convert the following to decimals and percentages.

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

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

What is $\frac{4}{5}$ of 80?

Give the answer to the following in its simplest form.

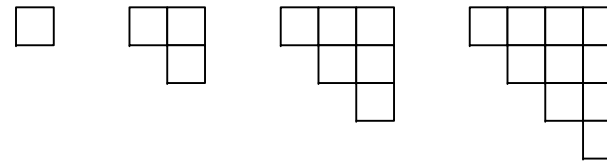
$$\frac{4}{5} \times \frac{15}{16} =$$

Fill in the table for the co-ordinates
for $y=12 - x$ for $-3 \leq x \leq 5$

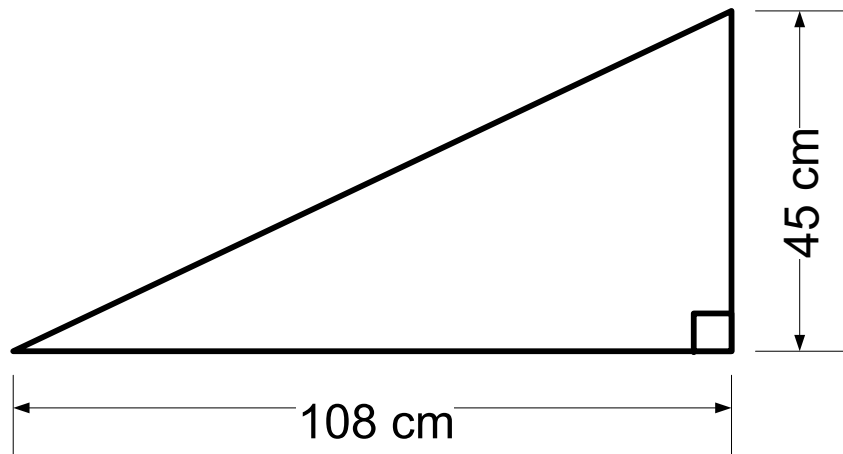
x	-3	-2	-1	0	1	2	3	4	5
y	15				11				7

Give the coordinates
of the y intercept. (\quad, \quad)

Look at the pattern made from the
squares.



Which pattern has 36 squares?



What is the perimeter of the triangle?

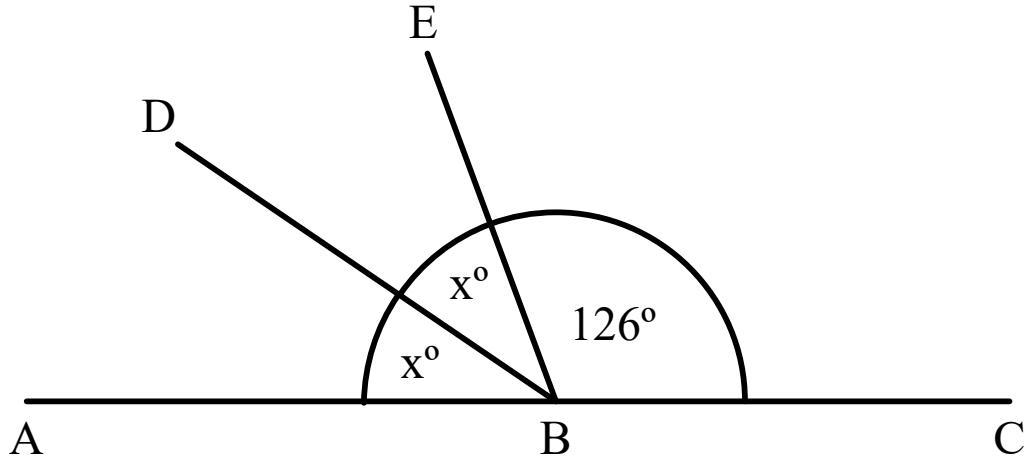
$$\frac{9}{10} \div \frac{2}{3} =$$

$$\frac{9}{10} \times \frac{2}{3} =$$

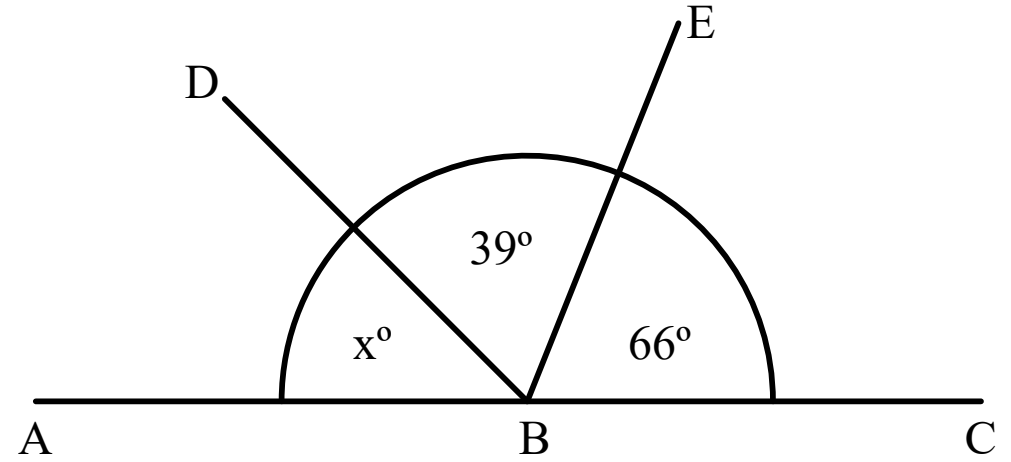
$$\frac{9}{10} + \frac{2}{3} =$$

$$\frac{9}{10} - \frac{2}{3} =$$

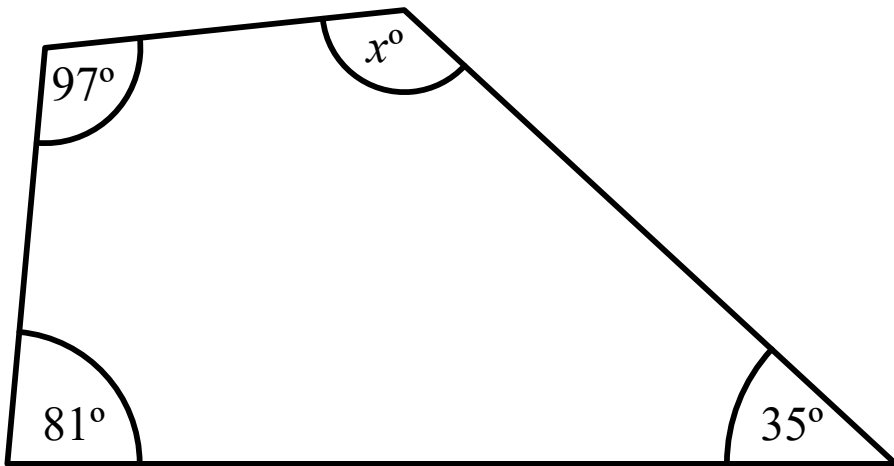
ABC is a straight line. Find the value of x.



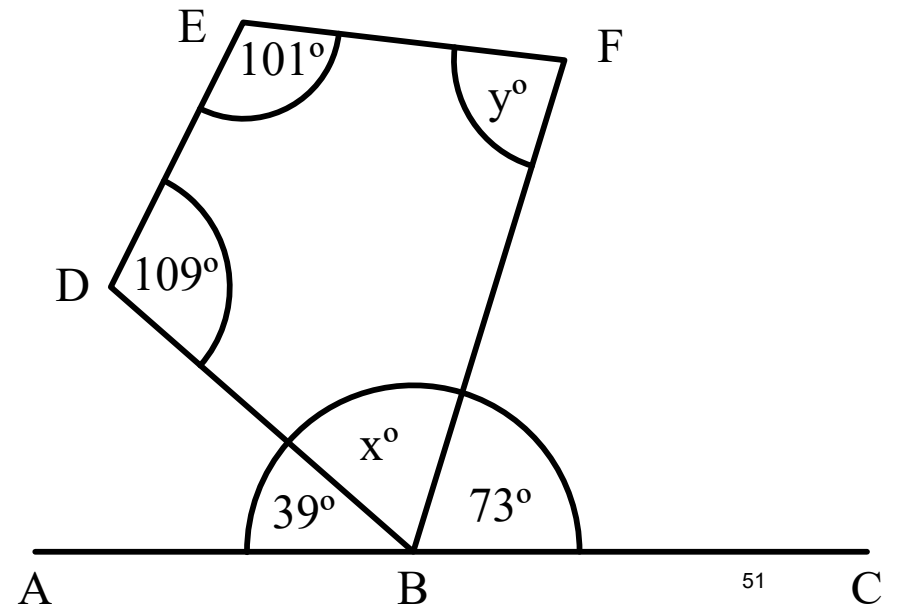
ABC is a straight line. Find the value of x.



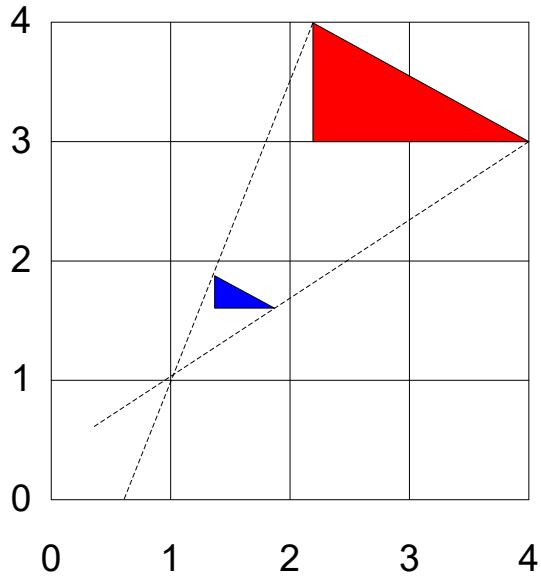
ABC is a quadrilateral. Find the value of x.



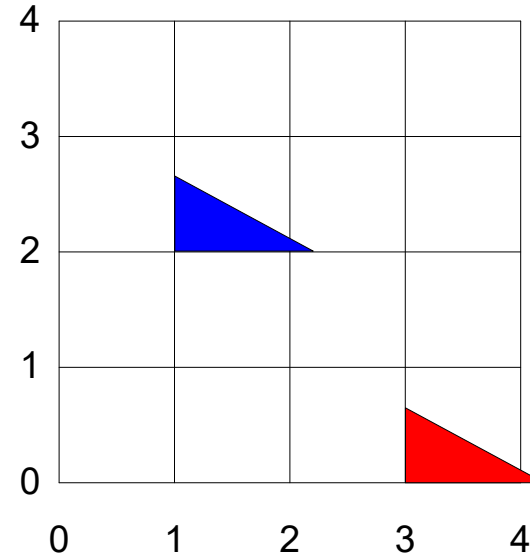
ABC is a straight line. BDEF is a quadrilateral. Find the values of x and y.



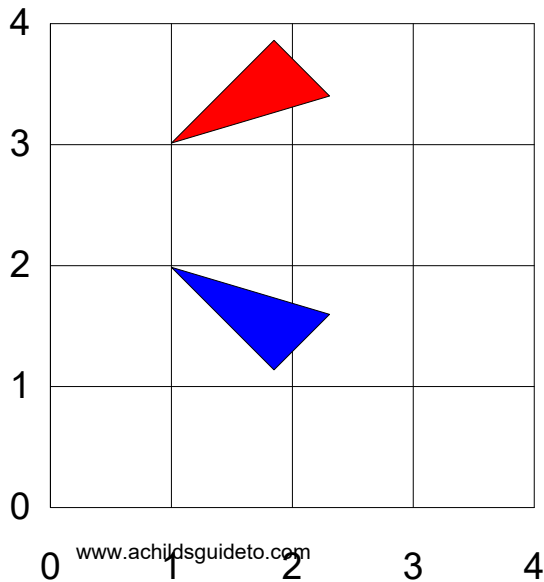
Describe fully the single transformation shown below.



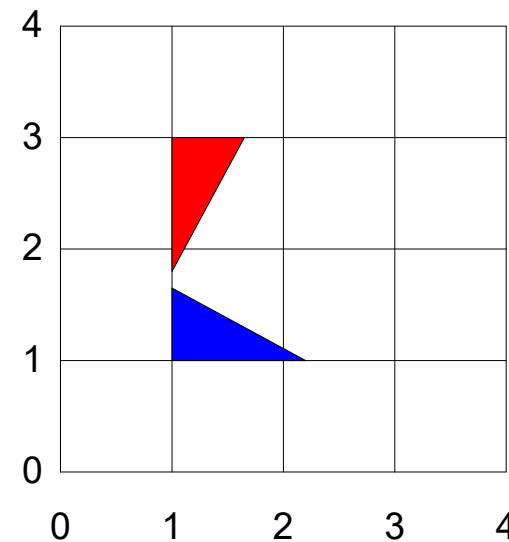
Describe fully the single transformation shown below.



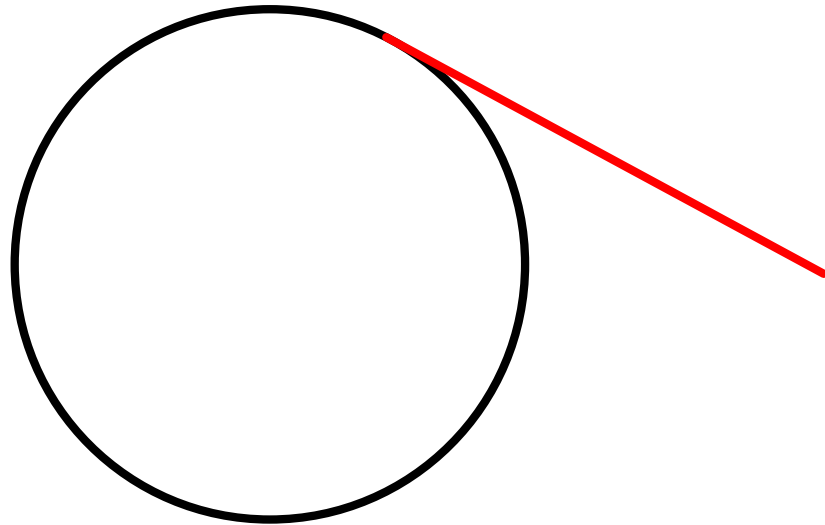
Describe fully the single transformation shown below.



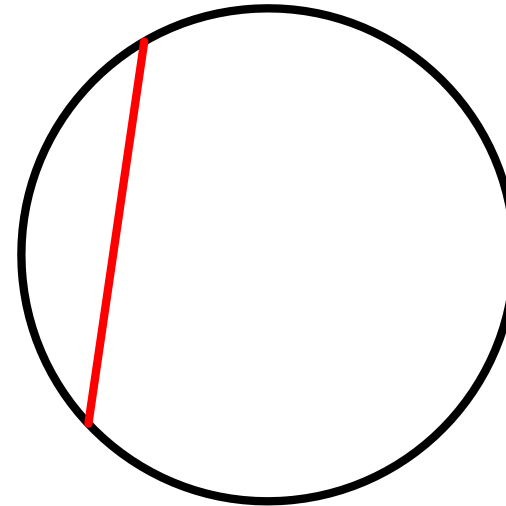
Describe fully the single transformation shown below.



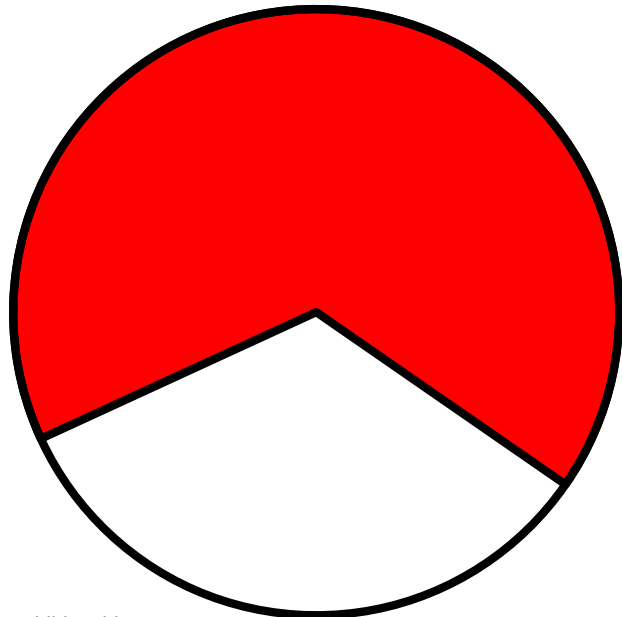
Identify the red part of the circle.



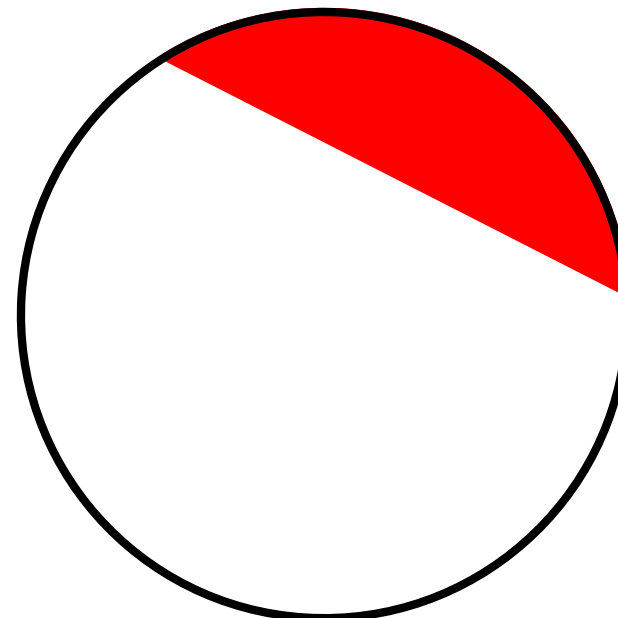
Identify the red part of the circle.



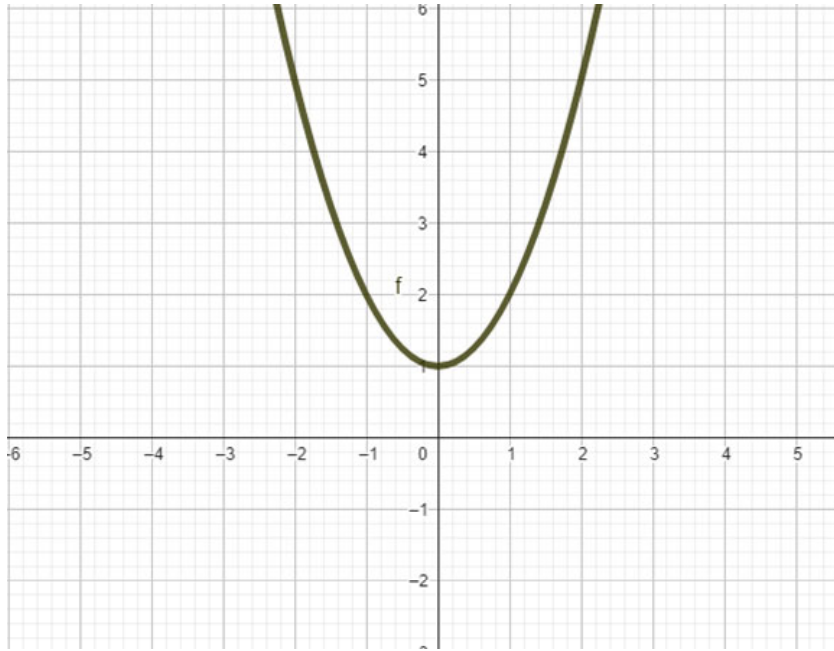
Identify the red part of the circle.



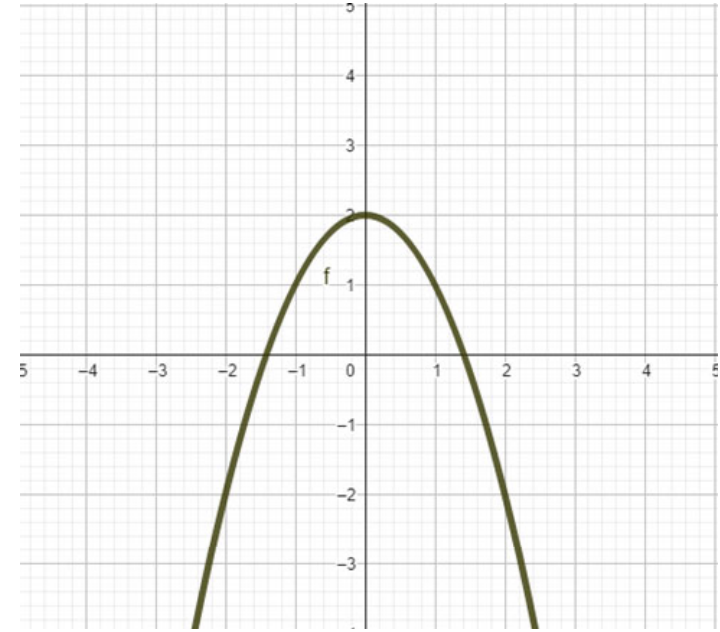
Identify the red part of the circle.



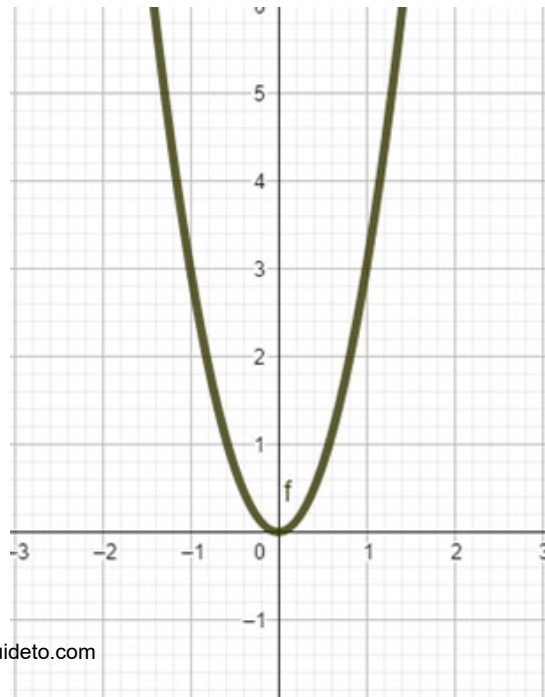
Identify the function of the graph.



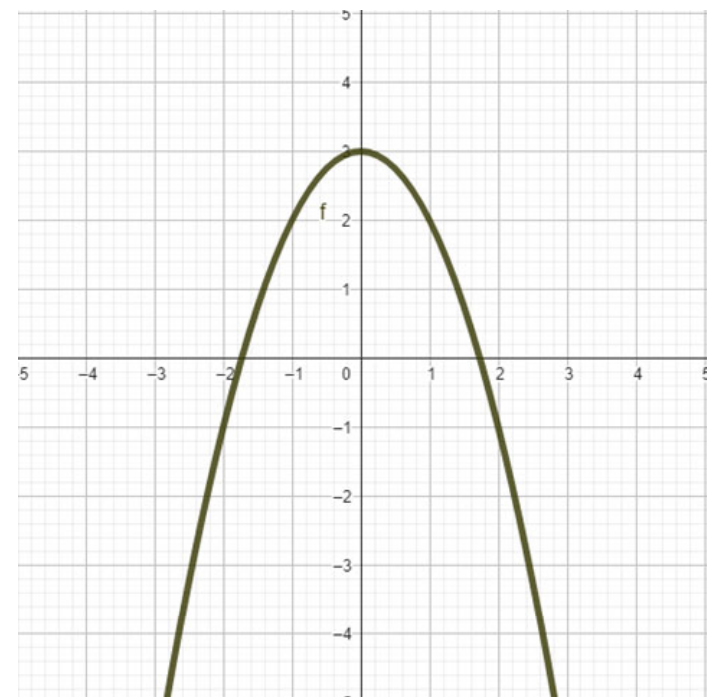
Identify the function of the graph.



Identify the function of the graph.



Identify the function of the graph.



Answers

Page 1

120 minutes	32,39,46
$60 \times 11 = 660 \text{ cm}^2$	70%, 0.702, 0.72, $\frac{3}{4}$, $\frac{4}{5}$

Page 2

39 parts and 23 parts	£10
$\frac{8}{21}$, $\frac{3}{21} = \frac{1}{7}$, $\frac{8}{21}$, $\frac{2}{21}$	One part: 15 sweets. Charlotte gets 60 sweets

Page 3

$y=3$	$x=3$
$y=x$	$y=-x$

Page 4

$\frac{2}{6}$ or $\frac{1}{3}$	0.52 and 0.82
150	$\frac{3}{5}$

Page 5

A and E	-15, -19, -23
Base is 360 cm. Area $14,580 \text{ cm}^2$	0.8, 0.802802, 81%, $\frac{9}{11}$, $\frac{17}{20}$

Page 6

Enlargement Scale factor 4 from centre of enlargement (1,1) blue to red or scale factor $\frac{1}{4}$ red to blue	Translation by vector $\begin{pmatrix} -2 \\ 2 \end{pmatrix}$ blue to red or $\begin{pmatrix} 2 \\ -2 \end{pmatrix}$ red to blue
Reflection through the mirror line $y=2.5$	Blue to Red Rotation CW90 about centre of rotation (3,2) Red to Blue Rotation CCW90 about centre of rotation (3,2)

Page 7

$y \mid -11 \mid -10 \mid -9 \mid -8 \mid -7 \mid -6 \mid -5 \mid -4 \mid -3 \mid -2 \mid -1$	$2^2 \times 3 \times 7$
$-24x + 32 \quad 42x^2 + 54x$	$4(4x - 9)$

Page 8

Hypotenuse is 145 cm. Perimeter is 312 cm	$2^2 \times 3^2 \times 5$
$\frac{3}{25}, \frac{7}{25}, \frac{10}{25} = \frac{2}{5}, \frac{5}{25} = \frac{1}{5}$	$2pq^2(2+3pq)$

Page 9

£472	32, -64, 128 (Multiplying by -2 each time)
Base is 77cm: area = 1386 cm ²	0.079, $\frac{7}{10}$, 70.2%, 0.72, $\frac{3}{4}$

Page 10

$x=26^\circ$	$x=59^\circ$
$x=103^\circ$	$x=76^\circ \quad y=45^\circ$

Page 11

$\frac{5}{12}$	$\frac{8}{25} = 0.32, \frac{4}{5} = 0.8$
315	$\frac{3}{5}$

Page 12

y -20 -16 -12 -8 -4 0 4 8 12 16 20	$2^4 \times 3 \times 5$
$12x - 15$ and $15x^2 + 10x$	$4(3x + 2)$

Page 13

$\sin = \frac{\text{Opposite}}{\text{Hypotenuse}}, \cos = \frac{\text{Adjacent}}{\text{Hypotenuse}}, \tan = \frac{\text{Opposite}}{\text{Adjacent}}$	Hypotenuse is opposite the right angle. Adjacent is the other side next to the marked angle. Opposite does not touch the marked angle.
$85 \tan 27 = 43.30966321 \approx 43.3 \text{ cm}$	$34.21570213^\circ = 34^\circ 12' 56.528''$

Page 14

Hyp = 173 cm Perimeter = 390cm	$2^3 \times 3^2 \times 5$
$12/30 = 2/5, 3/30 = 1/10, 7/30, 8/30 = 4/15$	$8(3+4f)$

Page 15

20 parts and 23 parts	£5 each part, $7-3 = 4, 4 \times 5 = \text{£}20$ more
$3/25, 7/25, 10/25 = 2/5, 5/25 = 1/5$	One part $60/5 = 12$ sweets. $4 \times 12 = 48$ sweets

Page 16

y 9 4 1 0 1 4 9 16 25	15 squares then 21 squares
Hypotenuse = 137 cm Perimeter = 330 cm	$11/12 \div 3/8 = 22/9; 11/12 \times 3/8 = 11/32; 11/12 + 3/8 = 31/24;$ $11/12 - 3/8 = 13/24$

Page 17

26°	59°
103°	$x = 76^\circ y = 45^\circ$

Page 18

20 parts and 28 parts	£8
$6/30 = 1/5$, $9/30 = 3/10$, $15/30 = 1/2$	1.2 : 1

Page 19

$y = 1/x$	$y = 2x + 1$
$y = 3 - x$ or $y = -x + 3$	$y = e^x$

Page 20

$3/10$, $7/20$, $1/6$, $1/2$	$8/10 = 0.8$ and 80%, $3/5 = 0.6$ and 60%
36	$1/3$

Page 21

$5^2 = 25$, $14^2 = 196$, $12^2 = 144$, $8^2 = 64$, $4^2 = 16$, $13^2 = 169$	a $x = \sqrt{c^2 - b^2}$ b $x = \sqrt{c^2 - b^2}$ c $x = \sqrt{c^2 - b^2}$
13 cm	$13 + 12 + 5 = 30$ cm

Page 22

16 parts, 28 parts	$96 \div 8 = \text{£}12$
$12/45 = 4/15$, $15/45 = 1/3$, $18/45 = 2/5$	1 : 2.2

Page 23

$y \mid 18 \mid 16 \mid 14 \mid 12 \mid 10 \mid 8 \mid 6 \mid 4 \mid 2 \mid$	7 th pattern
$41 + 40 + 9 = 90$ cm	$7/12 \div 2/7 = 49/24 = 2$ and $1/24$ $7/12 \times 2/7 = 1/6$ $7/12 + 2/7 = 73/84$ $7/12 - 2/7 = 25/84$

Page 24

20 parts and 16 parts	$90 \div (4+11) = 6$
$25/100 = \frac{1}{4}$, $30/100 = 3/10$, $45/100 = 9/20$	1: 3.5

Page 25

y -11 -9 -7 -5 -3 -1 1 3 5	78 squares
Hypotenuse = 45cm Perimeter = $45+36+27 = 108$	$7/10 \div 2/5 = 7/4 = 1 \text{ and } 3/4$ $7/10 \times 2/5 = 14/50$ $7/10 + 2/5 = 11/10 = 1 \text{ and } 1/10$ $7/10 - 2/5 = 3/10$

Page 26

radius	diameter
tangent	chord

Page 27

$180 - 115 = 65^\circ$	$180 - (87+64) = 29^\circ$
$180 - (85+29) = 66^\circ$	$x=180-(67+42)=71^\circ$; $y=180-(29+71) = 80^\circ$

Page 28

19 parts and 209 parts	$190 \div (4+6+9) = 10$ sweets
6/19	$4+6+9 = 19$; $380 \div 19 = 20$; Mary $20 \times 4 = \text{£}80$; Mungo $6 \times 20 = \text{£}120$; Midge $9 \times 20 = \text{£}180$

Page 29

$8^2=64, 15^2=225, 10^2=100, 6^2=36, 9^2=81, 17^2=289$	a $x = \sqrt{a^2 + b^2}$ b $x = \sqrt{c^2 - b^2}$ c $x = \sqrt{a^2 + b^2}$
$x = \sqrt{15^2 + 8^2} = 17 \text{ cm}$	$8+15+17 = 40 \text{ cm}$

Page 30

y -10 -4 2 8 14 20 26 32 38 44 50	$2 \times 3 \times 5^2$
$28x - 20$ and $24x^2 + 18x$	$4(6x+9)$

Page 31

Circumference	Radius
Diameter	Sector

Page 32

$7^2=49, 11^2=121, 20^2=400, 29^2=841, 21^2=441, 16^2=256$	a $x = \sqrt{c^2 - b^2}$ b $x = \sqrt{c^2 - b^2}$ c $x = \sqrt{c^2 - b^2}$
29cm	$20 + 21 + 29 = 70\text{cm}$

Page 33

$y=x^3$	$y= -x^3 + 2$
$y= -x^3$	$y=x^3 + 2$

Page 34

Translation by vector $\begin{pmatrix} 2 \\ 3 \end{pmatrix}$ blue to red or $\begin{pmatrix} -2 \\ -3 \end{pmatrix}$ red to blue	Blue to red: Rotation CW90 about centre of rotation (3,1) Red to Blue: Rotation CCW90 about centre of rotation (3,1)
Enlargement Scale factor 2 from centre of enlargement (1,1) blue to red or scale factor $\frac{1}{2}$ red to blue	Reflection in the mirror line $y=2$

Page 35

$140 + (340 \times 0.30) = \text{£}242.00$	162, 486, 1458 (Each term is 3 times the previous term)
Base = 45 cm. Area = $0.5 \times 28 \times 45 = 630 \text{ cm}^2$	0.72, $\frac{8}{11}$, $\frac{3}{4}$, 80%, 0.802802

Page 36

$180 - 115 = 65^\circ$	$180 - (87+64) = 29^\circ$
$180 - (85+29) = 66^\circ$	$x=180 - (67+42) = 71^\circ$; $y=180 - (71 + 29) = 80^\circ$

Page 37

$\frac{9}{35}$	$\frac{7}{20} = 0.35 = 35\%$; $\frac{17}{50} = 0.34 = 34\%$
180	3

Page 38

Some Officers Have Curley Auburn Hair Til Old Age	Hypotenuse is opposite the right angle. Adjacent is the other side next to the marked angle. Opposite does not touch the marked angle.
$120 \sin 18 = 37.08203932 \text{ cm} \approx 37.1 \text{ cm}$	$61.11361823^\circ = 61^\circ 6' 48.306''$

Page 39

y 15 13 11 9 7 5 3 1 -1 -3 -5	$2^2 \times 3 \times 7$
-24x + 32 and $42x^2 + 54x$	$2m(4 + 3n)$

Page 40

$\sin = \frac{\text{Opposite}}{\text{Hypotenuse}}, \cos = \frac{\text{Adjacent}}{\text{Hypotenuse}}, \tan = \frac{\text{Opposite}}{\text{Adjacent}}$	Hypotenuse is opposite the right angle. Adjacent is the other side next to the marked angle. Opposite does not touch the marked angle.
$72 \cos 31 = 61.71604565 \text{ cm} \approx 61.7 \text{ cm}$	$\sin^{-1}(18/84) = 12.37362512 = 12^\circ 22' 25.05''$

Page 41

Pentagon 3 triangles Hexagon 4 triangles			$x + 3x + 55 = 180$
Quadrilateral 2 triangles Heptagon 5 triangles			
Number of sides	Number of triangles	Number of degrees	$85 + 115 + x + 2x + x + 12 = 540$ $4x + 212 = 540$ $4x = 328$ $x = 82^\circ$ AED = 115°, BAE = 85°, ABC = 94°, BCD = 164° CDE = 82°
4	2	360	
5	3	540	
6	4	720	
7	5	900	
23	21	3780	

Page 42

x+12	$x + x + 30 + 70 = 180$
	x=40°
$w + w - 15 + w - 15 + 17 = 3w - 13$	$95 + 120 + x + 2x + x + 20 = 540$ $4x + 235 = 540$ $4x = 305$ $x = 76.25^\circ$ AED = 120°, BAE = 95°, ABC = 96.25°, BCD = 152.5° CDE = 76.25°

Page 43

y -4 -1 2 5 8 11 14 17 20	36 squares
Hypotenuse = 37 cm; Perimeter 37 + 35 + 12 = 84cm	$3/4 \div 5/6 = 9/10$ $3/4 \times 5/6 = 5/8$ $3/4 + 5/6 = 38/24 = 1 \text{ and } 7/12$ $5/6 - 3/4 = 1/12$

Page 44

$5^2= 25, 16^2=256, 12^2=144, 37^2=1369, 39^2= 1521, 35^2=1225$	a $x = \sqrt{c^2 - b^2}$ b $x = \sqrt{a^2 + b^2}$ c $x = \sqrt{c^2 - b^2}$
35 cm	$0.5 \times 35 \times 12 = 210 \text{ cm}^2$

Page 45

$x + x + 12 = 2x + 12$	$x + 4x + 64 = 180$ $5x + 64 = 180$ $5x = 116$ $x = 23.2$ CAB = 64°, ABC = 92.8°, BCA = 23.2°
$d + d+7 + 2(d+7) = d + d + 7 + 2d + 14 = 4d + 21$	$\frac{p + p + 12 + 3(p + 12)}{3} = \frac{5p + 48}{3}$

Page 46

$12/54 = 2/9$	$7/25 = 0.28 = 28\%$ $27/50 = 0.54 = 54\%$
90	5/8

Page 47

$9/10, 17/20, 5/6, 1/2$	$7/10 = 0.7 = 70\%$ $2/5 = 0.4 = 40\%$
8	8/15

Page 48

$x+x+112 = 180$; $2x + 112 = 180$; $2x = 68$; $x = 34^\circ$	$x + 49 + 71 = 180$; $x + 120 = 180$; $x = 60^\circ$
$x + 95 + 85 + 38 = 360$; $x + 218 = 360$; $x= 142^\circ$	$x + 39 + 68 = 180$; $x= 180 - 107$; $x=73^\circ$; $y + 104 + 118+ 73 = 360$; $y = 65^\circ$

Page 49

$5/10 = \frac{1}{2}$, $13/20$, $2/6$, $1/4$	$7/10 = 0.7 = 70\%$; $2/5 = 0.4 = 40\%$
64	$\frac{3}{4}$

Page 50

y 15 14 13 12 11 10 9 8 7 	8th pattern
Hypotenuse = 117 cm; Perimeter = 270 cm	$9/10 \div 2/3 = 27/20 = 1 \text{ and } 7/20$ $9/10 \times 2/3 = 3/5$ $9/10 + 2/3 = 47/30 = 1 \text{ and } 7/30$ $9/10 - 2/3 = 7/30$

Page 51

$2x + 126 = 180$; $2x = 54$; $x=27^\circ$	$x + 39 + 66 = 180$; $x + 105 = 180$; $x = 75^\circ$
$x + 97 + 81 + 35 = 360$; $x + 213 = 360$; $x=147^\circ$	$x + 73 + 39 = 180$; $x = 68$; $y + 101 + 109 + 68 = 360$; $y = 82^\circ$

Page 52

Blue to Red: Enlargement Scale factor 4 from centre of enlargement (1,1)	Translation by vector $\begin{pmatrix} 2 \\ -2 \end{pmatrix}$ blue to red or $\begin{pmatrix} -2 \\ 2 \end{pmatrix}$ red to blue
Red to Blue: Enlargement Scale factor $\frac{1}{4}$ from centre of enlargement (1,1)	
Reflection in the mirror line $y=2.5$	Red to Blue: Rotation 90 CCW about centre of rotation (2,2) Blue to Red: Rotation 90 CW about centre of rotation (2,2)

Page 53

tangent	chord
sector	segment

Page 54

$y=x^2 + 1$	$y = -x^2 + 2 = 2 - x^2$
$y=3x^2$ (The clue to the 3 is the parabola goes through the point (1,3))	$y = -x^2 + 3 = 3 - x^2$