Sutton Maths Class

Year 5 - Week 26 - Bearings and Roman Numerals

Starter:

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

2 $\frac{9}{10} \times \frac{5}{6} =$

3 What is 10.5% as a fraction?

4 What is $\frac{7}{20}$ as a percentage?

5 $4000 \times 0.2 =$

6* $0.4 \div 0.2 =$

7 Increase £9.99 by $\frac{2}{9}$.

8 Decrease £30 by 30%.

9 Calculate $-20 - -20 =$

10 Write 300 as a product of primes.

11 Find the lowest common multiple of 50 and 20.

12 Write the next two terms: 7, 5, 14, 4, 21, 3, 28, 2, ___, ___

13 $7 + 80 \div 2^3 =$

14 Sally and Jane share a bag of blue and red sweets in the ratio 7:3. Sally's share is 35 sweets. How many does Jane get? How many blue and red sweets are there in total?

15* Find the first 4 terms of the sequence with nth term $7(n + 4)$.

16 Solve $\frac{3x}{7} = 6$

17 Solve $10x = 4x + 36$

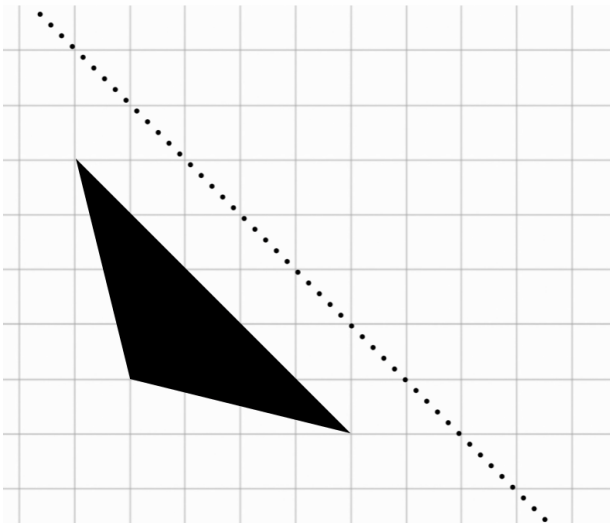
18 I roll two dice. What is the probability that I will score a double of any number?

19* Find the area of a triangle with base 5m and height 150cm. Given your answer in m^2.

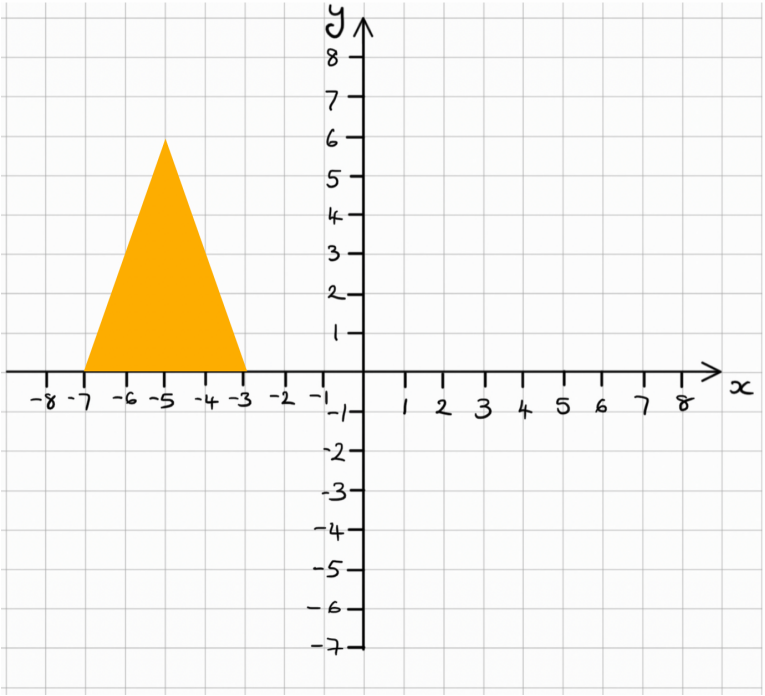
20 How many vertices does a square base pyramid have?

21 A jug holds 1.5 litres when it is full. How many 200 ml cups **full** of water can we pour from the jug if it is full of water?

22 Reflect the following shape in the given mirror line.



23 Rotate the triangle 180° clockwise about the point (0,0).



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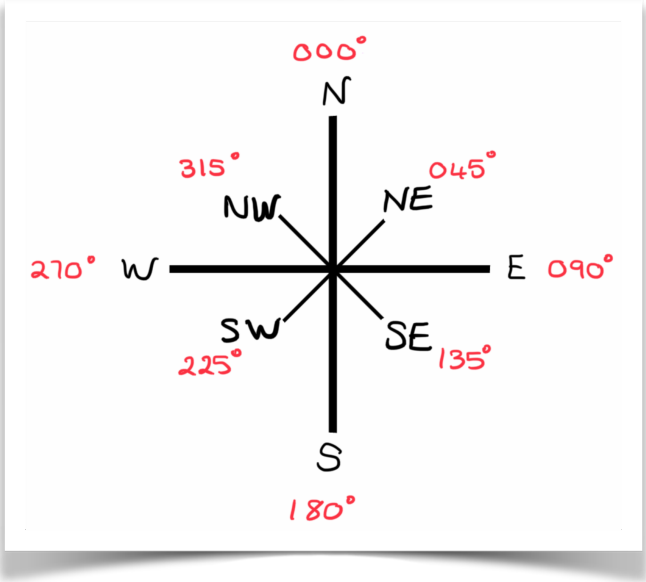
Bearings

Bearings always measure clockwise from the North line.
Bearings are always expressed with three figures, for example, a bearing of 60° is written as 060°.



1 I stand facing North, turn 180° clockwise. Which direction am I now facing?

2 I am travelling South East, which is a bearing of 145°, true or false?

3 I am travelling South West and turn 45° clockwise. In which direction will I now be facing?

4 I am facing NW and turn 180° clockwise and then 90° anti clockwise. What direction am I facing?

Roman Numerals

1 Write the following in Roman numerals:

a)	32	b)	75
c)	28	d)	150
e)	118	f)	600
g)	1990	h)	2020

2 Write the following as Arabic numbers:

a)	XLV	b)	XXIX
c)	MDL	d)	LXXIX
e)	CCCXX	f)	DCXL
g)	XLI	h)	XXXVI

1	I	11	XI	50	L
2	II	12	XII	100	C
3	III	13	XIII	500	D
4	IV	14	XIV	1000	M
5	V	15	XV		
6	VI	16	XVI		
7	VII	17	XVII		
8	VIII	18	XVIII		
9	IX	19	XIX		
10	X	20	XX		

3 Write this year in Roman Numerals.

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Challenging Algebra - Beyond 11 Plus (GCSE Standard)

1 Solve the following equations, leave your answer as a fraction:

$-10 = 2x - 6$	$a - 4 = 3a - 8$
$6 = 6 + 6x$	$r - 10 = 5r + 3$
$6x - 10 = 2x + 5$	$\frac{6x - 5}{10} = 5x + 8$
$6 - 5x = -3$	$10 - 2y = 4 - 3y$
$-y - 5 = -9$	$\frac{x}{6} = 7$
$\frac{x}{20} = 3$	$6 = \frac{y}{3}$
$\frac{2x}{5} = 4$	$\frac{x}{2} = \frac{1}{5}$
$\frac{4x}{7} = -6$	$\frac{3}{4} = \frac{2x}{3}$
$\frac{x}{2} + 5 = 10$	$\frac{x}{3} - 2 = 4$
$\frac{x}{5} - 8 = -3$	$\frac{a}{2} - 1 = \frac{1}{4}$
$\frac{t}{3} + \frac{5}{6} = \frac{1}{6}$	$-\frac{2}{5} + \frac{x}{10} = \frac{4}{5} - \frac{x}{5}$
$\frac{5x + 5}{5} = 10$	$\frac{8x - 3}{4} = \frac{3x - 1}{3}$

2 3(x + 1) means '3 multiplied by all of x + 1'. So we have to do 3 multiplied by x and also 3 multiplied by 1. So 3(x + 1) is equal to 3x + 3. **We write 3(x + 1) = 3x + 3.** We call this **expanding bracket**. Expand and simplify the following:

$7(x + 2)$	$5(x - 3)$	$10(y + 6)$
$9(r - 3)$	$-2(x + 6)$	$-4(y - 4)$
$6(x + 4) + 2(x + 3)$	$3(x - 5) + 2(x - 1)$	$7(x - 1) + 3(x + 5)$
$5(x + 10) - 2(x + 3)$	$10(x + 4) - 4(x + 9)$	$9(x + 3) - 6(x - 4)$
$8(x - 2) - 3(x - 4)$	$8(1 - x) - 6(5 + x)$	$8(5 - 2x) + 8(10 - x)$
$7x(x + 2)$	$5x(x - 3)$	$-3x(10 - x)$
$4x(x + 4) - 2x(x + 1)$	$8x(3 - x) - 4x(10 - x)$	$7x(x - 3) - 3(x - 2) - x(x + 5)$

3 A rectangle has length 3x - 3 and width x + 4. The perimeter of the rectangle is 26cm. Find the area of the rectangle.