Sutton Maths Class

Year 5 - Week 16 - Measures

Starter:

1 a $\frac{5^{40}}{7} + \frac{3^{21}}{8} = \frac{61}{56}$ b $\frac{8}{9} - \frac{2^{6}}{3^{9}} = \frac{2}{9}$

2 a $\frac{5}{6} \times \frac{4}{4} = \frac{5}{6}$ b $\frac{5}{6} \div \frac{1}{4} = \frac{20}{6} = \frac{10}{3}$ or $3\frac{1}{3}$

3 What is 0.1 as a percentage? 10%

4 What is $\frac{4}{5}$ as a decimal? 0.8

5 What is 1% as a fraction? $\frac{1}{100}$

6 a 700 x 0.5 = 350 b 400 x 0.2 = 80

7 a $0.4 \times 0.6 =$ 0.24 b $0.5 \times 0.3 =$ 0.15

8 $70 \div 0.5 =$ 140
Hint: First think about how many times does 0.5 'go into' 1?

9 Find $\frac{8}{9}$ of 180g.
20 x 8 = 160g

10 Decrease £8000 by 25%. £6000
Hint: Find 25% and 'take it away' for *decrease*.

11 a What is 50g as a fraction of 500g? $\frac{50}{500} = \frac{5}{50} = \frac{1}{10}$
Hint: units need to be the same first, remover 1 litre = 1000ml.

b* What is 20g as a fraction of 0.2kg? $\frac{20}{200} = \frac{1}{10}$
200g

12 a $60 - 100 =$ −40 b $30 - 40 =$ −10

13 a $-8 + -10 =$ −18 b $-8 - -4 =$ −4

14 a $-70 \div -5 =$ 14 b $-300 \div -10 =$ 30

15* a $(-60)^2 =$ 3600 b $(-40)^2 =$ 1600

16 What is the highest common factor of 90 and 20? 10

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17 Write 90 as a product of primes by drawing a factor tree.

90
45 2
5 9
3 3

$90 = 2 \times 3 \times 3 \times 5$
or $2 \times 3^2 \times 5$

18 Put the following in ascending order: $\frac{10}{12}, \frac{4}{6}, \frac{7}{8}$

20 16 21
24 24 24

$\frac{4}{6}, \frac{10}{12}, \frac{7}{8}$

Hint: change all of the fractions so that they have a common denominator.

19 What are the next two terms: 7, 10, 14, 13, 21, 16, 28, 19, 35

20 $4 \times (5 - 3)^2 =$ 16

2^2

21 * If $a = 3$, $b = 100$ and $c = 4$, calculate $(6a - 2b) \div b$

$(18 - 200) \div 100$
$-182 \div 100 = -1.82$

22 Simplify 21:24

7 : 8

23 Split 6000g in the ratio 7:5.

$12 \overline{)6000}$ = 500

$500 \times 7 = 3500$
$500 \times 5 = 2500$

24 Adam, Lyndon and Elliot share 50 sweets in the ratio 5:3:2. Elliot eats half of his sweets, how many does he have left?

$50 \div 10 = 5$
$2 \times 5 = 10$ → Elliot
5 left

25 Find the nth term of 14, 17, 20, 23 ...

+11 +3 +3

$3n + 11$

26** Find the first four terms of the sequence with n^th term $(n + 1)^2$.

Note: remember to do the brackets first before squaring.

$2^2 = 4$
$3^2 = 9$
$4^2 = 16$
$5^2 = 25$.

27 Write an equation to represent the following statement and solve your equation to find the number you first thought of:

I think of a number multiply it by 5 then subtract 3. The answer is 12.

$5x - 3 = 12$ $12 + 3 = 15$ $15 \div 5 = 3$

28* Solve $\frac{n}{10} = 5$

$n = 50$

29 Solve $5t + 8 = 33$

$33 - 8 = 25$
$25 \div 5 = 5$

30* Solve $8x + 3 = 6x + 9$

$2x + 3 = 9$ $2x = 6$ $x = 3$

31 A bag contains 4 blue marbles, 3 green marbles and 3 red marbles. What is the probability that a marble selected from the bag at random is:

a) blue $4/10 = 2/5$
b) not blue $3/5$

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Key Facts

Metric Units of Measure	Imperial Units of Measure
Length: 1 km = 1000m 1m = 100cm 1cm = 10mm Weight: 1 tonne = 1000kg 1 kg = 1000g 1g = 1000mg Capacity: 1 litre = 1000ml	Length: 1 mile = 1760 yards 1 yard (yd) = 3 feet 1 foot (ft) = 12 inches Weight: 1 stone = 14 pounds 1 pound (lb) = 16 ounces (oz) Capacity: 1 gallon = 8 pints

Approximate Equivalences (≈ means 'is approximately equal to')

Length:

8 km ≈ 5 miles (1 mile ≈ 1.6km)

1 yard ≈ 90 cm

1 foot ≈ 30 cm

1 inch ≈ 2.5 cm

Weight:

1 ounce (oz) ≈ 30 grams (g)

1 kg ≈ 2.2 pounds

Capacity:

1 pint ≈ 0.6 litre (l)

1 gallon ≈ 4.5 litres

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Questions:

1	a	3 m = 300 cm	
	b	7.6 litres = 7600 ml	
	d	700 cm = 7 m	
	e	120 mm = 12 cm	
	f	1500g = 1.5 kg	
	g	9.8km = 9800 m	
	h	70cm = 0.7 m	
	i*	6m = 6000 mm	
	j*	2.8m = 280 cm	
	k*	3.5 m = 3500 mm	
	l*	58cm = 0.58 m	
	m*	300mm = 0.3 m	
	n*	2.4 kg = 2400 g	
	o*	648g = 0.648 kg	
	p*	680cm = 0.0068 km = 6.8m	
	q*	7000 mm = 0.007 km = 700cm = 7m	
	r*	500ml = 0.5 litres	
	s*	264 ml = 0.264 litres	
	t*	37 ml = 0.037 litres	
	u*	25g = 0.025 kg	
	v*	3g = 0.003 kg	
2		12 lb = 192 oz	16×12=192
3		Which is longer: 50 miles or 50 km?	
4		Which is less: 7 pints or 7 litres?	
5**	a	450 cm ≈ 5 yards 90cm = 1 yd	
	b	5 pints ≈ 3 litres	
	c	6 yds ≈ 5.4 m	
	d	6.5 stone = 91 lb	
	e	7ft = 84 inches	
	f	2 inches ≈ 5 cm	
	g	3 feet ≈ 90 cm	
	h	5 oz ≈ 150 g	
	i	45 litres ≈ 10 gallons	
*	j	2m 50cm ≈ 8 ⅓ feet or 8ft 4cm	
	k	10 kg ≈ 22 lb	
	l	9m ≈ 10 yards	
	m	240 g ≈ 8 oz	

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6** Write < or > to make the statements correct:

a 3 yards < 3 metres

b 8 yards > 7m

c 12 oz < 370 g

d 4 inches < 11cm

e 16 pints > 8 litres

f 9 miles > 14 km

g 17 oz > 0.5 kg

h 11 inches < 29 cm

i 24 miles < 40 km

j 10 inches > 24 cm

k 4 pints > 2.2 litres

l 80 miles < 130 km

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