

S2 January Assessment Revision

Previous Revision:

1 a) i) 28.5 b) i) 377.4 c) i) 100.0
 ii) 28.463 ii) 377.385 ii) 100.000

2 a) $2 \times (-5) - 2 \times 3$ b) $-5 \times 2 - 2 \times 3$
 $= -10 - 6$ $= -10 - 6$
 $= -16$ $= -16.$

3 a) $B = 7 \times 7 + 3$ b) $B = 7 \times 18 + 3$
 $B = 52$ $B = 129$

4 a) $5p - 4 = 41$ b) $5p - 4 = 71$
 $5p = 45$ $5p = 75$
 $p = 9.$ $p = 15$

5 a) Home Farm McCabell's (1)
 $V = 20 \times 8 \times 11$ $V = 12 \times 12 \times 10$
 $V = 1760 \text{cm}^3$ $V = 1440 \text{cm}^3$

∴ Home Farm milk carton holds more milk as 1760ml > 1440ml.

b) Home Farm is better value because it has a larger volume for less money as £1.20 < £1.30

6. a) $40r + 10 - 24r + 3$ b) $9 - 24v + 20 - 42v - 24$
 $= 16r + 13$ $= -66v + 5$

7 a) $6p(p^2 - 3)$ b) $15r^3s^4(1 - 3s)$ c) $i^4j^4k^2(i^4 - jk)$

$$8 \text{ a) } (j-i)^3 \\ = (4 - (-6))^3 \\ = 10^3 \\ = 1000$$

$$\text{b) } jk^2 - i^2 + ij \\ = 4 \times (-8)^2 - (-6)^2 + (-6) \times 4 \\ = 4 \times 64 - 36 - 24 \\ = 256 - 36 - 24 \\ = 196$$

$$\text{c) } (k-j)^2 - ijk \\ = (-8 - 4)^2 - (-6) \times 4 \times (-8) \\ = (-12)^2 - 192 \\ = 144 - 192 \\ = -48$$

$$9 \text{ a) } \text{Perth from Dundee} = 254^\circ$$

$$\text{b) } \text{Dundee from Perth} = 74^\circ$$

FRACTIONS

$$\text{a) } \frac{3}{4} - \frac{1}{7}$$

$$= \frac{17}{28}$$

$$\text{b) } \frac{10}{7} - \frac{4}{5}$$

$$= \frac{22}{35}$$

$$\text{c) } \frac{5}{9} \times \frac{4}{3}$$

$$= \frac{20}{27}$$

$$\text{d) } \frac{5}{2} - \frac{11}{6}$$

$$= \frac{4}{6} = \frac{2}{3}$$

$$\text{e) } \frac{4}{9} \div \frac{2}{3}$$

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

$$\text{f) } \frac{3}{7} + \frac{1}{2} + \frac{5}{8}$$

$$= \frac{87}{56}$$

$$2 \quad \frac{4}{5} + \frac{3}{4}$$

$$\frac{31}{20} = 1 \frac{1}{20} \text{ kg}$$

$$3 \text{ a) } \frac{1}{5} + \frac{2}{3} = \frac{13}{15}$$

$\therefore \frac{2}{15}$ of pupils came by car.

$$\text{b) } \frac{2}{15} \times 900$$

= 120 pupils came by car.

EQUATIONS

1 a) $x = 14$ b) $n = 7$ c) $k = 24$ d) $h = 19$.

2 a) $2x + 29 = 845$

b) 408 girls
437 boys

STATISTICS

1 19, 20, 20, 23, 25, 27, 29, 31, 35, 38, 39, 40

mode = 20

range = 21

median = 28

2 a) mean = 5 b) mean = 36

3 a) Boost = 84°

Minstrels = 162°

Fruit Gums = 114°

4. a)

5	6	9
6	0	4 4 4 6 6 8 8 8 8 8 8 8 9 9
7	0	1 2 4 5 7 8
8	0	5

key:

5/6 represents 56 kg
 $n = 26$.

- b) i) Range = 29
 ii) mode = 68
 iii) median = 8

5 a)

0	5	8	8	8	
1	1	2	4	5	6
2	0	1	8	9	
3	4				

key:

$1/2$ represents 12 years of age
 $n = 14$

- b) i) Range = 29
 ii) mode = 8
 iii) median = 4.5

- 6
- Swimming = 72°
 - Football = 30°
 - Athletics = 120°
 - Tennis = 18°
 - Track Cycling = 90°
 - Hockey = 30°

PROBABILITY.

$$1 a) P(\text{black}) = \frac{6}{22} = \frac{3}{11}$$

$$b) P(\text{red}) = \frac{3}{17}$$

$$2 a) \text{red} = 38, \text{yellow} = 32, \text{green} = 44, \text{yellow} = 36.$$

He is most likely to choose green

$$P(\text{green}) = \frac{44}{150} = \frac{22}{75}$$

$$b) P(\text{yellow}) = \frac{36}{96} = \frac{12}{32} = \frac{3}{8}$$

$$3 a) P(\text{female}) = \frac{14}{18} = \frac{7}{9}$$

$$P(3) = \frac{1}{6}$$

\therefore It is more likely the child is female than landing on a 3 because $\frac{7}{9} > \frac{1}{3}$

$$4 a) 17 \text{ pens}$$

$$b) i) \frac{17}{20}$$

$$ii) \frac{3}{20}$$

STANDARD FORM:

1 a) 5.68×10^6 b) 7.736×10^{-5} c) 4.309×10^5

d) 4.9029×10^{-4} e) 4×10^{-7} d) 2.3001×10^7

2 a) 42000 b) 7320,000 c) 0.000048

PROBLEM SOLVING:

1 a) $A = L \times b$
 $A = 3p(14p - 2)$
 $= 42p^2 - 6p$

b) $p = 14p - 2 + 14p - 2 + 3p + 3p$
 $p = 34p - 4$

c) $34p - 4 = 150$
 $34p = 154$

$p = \frac{77}{17} \text{ m or } 4.5 \text{ m (to one decimal place)}$

2 $x = \text{Lynne}$

$x + 80 = \text{Ross}$

$x - 138 = \text{Roisin}$

$2x = \text{Phil}$

$x + 482 = \text{Laura}$

Lynne raised £624

Ross raised £704

Roisin raised £486

Phil raised £1248

Laura raised £1106

a) $6x + 424 = 4168$

b) $x = 624$

3. $x =$ youngest sibling

$x + 4 =$ sibling 2

$x + 7 =$ sibling 3

$x + 30 =$ parent 1

$x + 30 =$ parent 2

$$5x + 71 = 96$$

$$5x = 25$$

$$x = 5$$

\therefore The youngest child is 5 years old

4. LCM of 3, 4 and 5 = 60.

\therefore After 60 minutes they will all siren at the same time \rightarrow 6pm

