

National 5 LifeSkills MF+S Practice

① $\frac{5}{7}$ of 560 = $(560 \div 7) \times 5 = 400$

400 grey cars

② $\frac{3}{8}$ of 152 = $(152 \div 8) \times 3 = 57$

57 girls in class

boys = $152 - 57 = 95$

95 boys in class

③ $\frac{7}{10}$ of 500 = $(500 \div 10) \times 7 = 350\text{g}$

350g of sugar is used

left = $500 - 350 = 150\text{g}$

150g of sugar is left in bag

④ $\frac{4}{9}$ of 765 = $(765 \div 9) \times 4 = 340$ miles

340 miles of the motorway has 3 lanes

Not 3 = $765 - 340 = 425$ miles

425 miles does not have 3 lanes

⑤ ~~8~~ Increase 40% Decimal Multiplier = $100\% + 40\% = 140\% = 1.4$

New weight = $30 \times 1.4 = 42\text{g}$

The packet now weighs 42g

⑥ VAT = 20% Decimal Multiplier = 100% + 20% = 120% = 1.2.

a) Total cost = 100×1.2
= £120

b) Total cost = 30×1.2
= £36

c) Total cost = 50×1.2
= £60

d) Total cost = 70×1.2
= £84

⑦ Sales = £260 Wages = £75 Outgoings = 35% Sales

a) Outgoings = 260×0.35
= £91

$$\begin{aligned} \text{Profit} &= \text{Sales} - (\text{Wages} + \text{Outgoings}) \\ &= 260 - (75 + 91) \\ &= \underline{\underline{£94}} \end{aligned}$$

The deli made £94 profit.

b) Outgoings = $£485 \times 0.35$
= £169.75

$$\begin{aligned} \text{Profit} &= 485 - (\text{~~155~~ } 155 - 169.75) \\ &= \underline{\underline{£160.25}} \end{aligned}$$

The deli made £66.25 more profit on Friday

8

- a) See other sheet They could expect 520 hrs of sunshine.
- b) They could expect 17.5mm of rain.

9

- a) See other sheet A man who is 1.72m tall could expect to jump 5.50m.
- b) A best jump of 5.55m would be ~~done~~ jumped by a man with an estimated height of around 1.72m.

⑩ The girls scores on average higher as the median is greater also the spread majority of their scores were more consistent and higher as shown by a lower Interquartile Range and higher as is shown by both the lower and upper quartiles being greater.

Therefore the teacher should choose the girls team.

⑪ a) Total Incomings = £1588

Total Outgoings = £1577

The Smiths have a surplus of £11

b) 5% increase Decimal Multiplier = $100\% + 5\% = 105\% = 1.05$

$$\begin{aligned}\text{New mortgage} &= 728 \times 1.05 \\ &= \text{£}764.40\end{aligned}$$

Their mortgage has increased by £36.40 which is more than £11 therefore they will need to re-evaluate as they are in deficit.

c) Mrs Smiths wages = $(678 \div 4) \times 5 = \text{£}847.50$.

Their income increases by £169.50, they would once more be in surplus now by £144.10.

	Cost	VAT	Total
Coat	£128.80	£25.76	£154.56
TV	£310	£62	£372
Fishing Rod	£12.50	£2.50	£15
Bicycle	£270	£54	£324
Trainers	£72	£14.40	£86.40
Fishing Reel	£55.50	£11.10	£66.60.

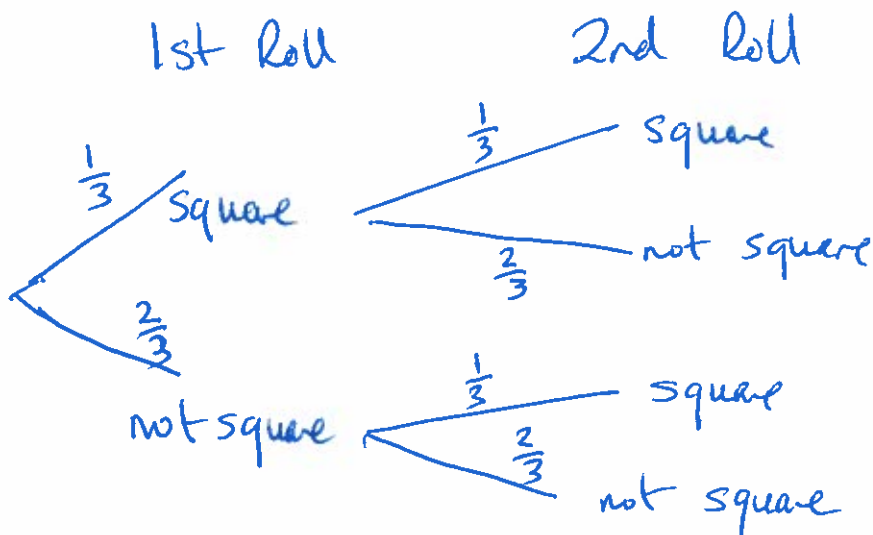
⑬ 2 red 3 green 5 blue

a) $P(\text{Green}) = \frac{3}{10}$ b) $P(\text{Not Green}) = 1 - \frac{3}{10} = \frac{7}{10}$

b) $P(\text{red or blue}) = P(\text{red}) + P(\text{blue})$
 $= \frac{2}{10} + \frac{5}{10}$
 $= \frac{7}{10}$

d) $P(\text{blue and blue}) = P(\text{blue}) \times P(\text{blue})$
 $= \frac{5}{10} \times \frac{5}{10}$
 $= \frac{25}{100} = \frac{1}{4}$

⑭



Square Numbers
1 and 4.

$$P(\text{Square}) = \frac{2}{6} = \frac{1}{3}$$

14) a) $P(\text{not square list}) = \frac{2}{3}$ b) $P(\text{no S1 and no S2}) = \frac{2}{3} \times \frac{2}{3} = \frac{4}{9}$

c) $P(\text{S1 NS2}) = P(S) \times P(NS) = \frac{1}{3} \times \frac{2}{3} = \frac{2}{9}$ d) $P(\text{S1 and S2}) = \frac{1}{3} \times \frac{1}{3} = \frac{1}{9}$

2 non square numbers is more likely as $\frac{4}{9} > \frac{1}{9}$

15) a) Actual Size = $\times 12 =$

b) Actual Size = $\times 30 =$

16) $\bar{x} = \frac{\sum x}{n} = \frac{102 + 102 + 101 + 98 + 99 + 101 + 103 + 102}{8}$
 $= \frac{808}{8} = 101$

x	$x - \bar{x}$	$(x - \bar{x})^2$
102	1	1
102	1	1
101	0	0
98	-3	9
99	-2	4
101	0	0
103	2	4
102	1	1
	Σ	20

$s.d = \sqrt{\frac{(x - \bar{x})^2}{n - 1}}$
 $s.d = \sqrt{\frac{20}{7}}$
 $s.d = 1.6903 \dots$
 $s.d = 1.7$

b) $\bar{x}_2 = 103$ s.d.₂ = 2.1

The second sample on average has more drawing pins in each box however the number of pins in each box is less consistent.

(17) 2016 = £ 82 000 Appreciation = 7%
 Decimal Multiplier = 100% + 7% = 107% = 1.07

Value in 2019 = $(1.07)^3 \times 82000$
 = 100 453.526
 = £ 100 453.53

(18)

1	7 8 9	
2	0 2 2 3 4 8	Bags hand span
	n = 9	Key 2 2 means 22 cm.

median = 22 mode = 22 $\bar{x} = \frac{\sum x}{n} = \frac{193}{9} = 21.44\dots$
21.4

