Lots of DATA 6 PLUS Answers in RED

Beard length(cm)	Frequency	f x midpoint
20<t≤30	20	25x20 = 500
30<t≤40	58	35x58 = 2030
40<t≤50	14	45x14 = 630
50<t≤60	3	55x3 = 165

Some beards are measured. The lengths are in the table.

(a) What is an estimate for the mean length?

(b) Another beard is measured at 41cm. Does this change the mean?

(a) Mean = (500+2030+630+165)÷95

Mean = 3325 ÷95

Mean = 35

(b) Yes, Mean now = 3366÷96

Length of Tortoise (cm)	Frequency	f x midpoint
10≤t<15	2	12.5x2 = 25
15≤t<20	58	17.5x58 = 1015
20≤t<25	34	22.5x34 = 765
25≤t<30	3	27.5x3 = 82.5

Some tortoises are measured. The lengths are in the table.

(a) What is an estimate for the mean length?

(b) Why is this only an estimate?

(c) Another tortoise is measured at 15cm.

Which group would this fit into?

(a) Mean = (25+1015+765+82.5)÷97

Mean = 1887.5 ÷97

Mean = 19.46 (2dec pl)

(b) Because we have lost the raw data. we must assume that the midpoint is a good estimate for the raw data

(c) 15≤t<20

Length of Tortoise (cm)	Frequency	
10≤t<15	2	
15≤t<20	58	
20≤t<25	34	
25≤t<30	3	

mode is most common

median is half way through the 97 data items

median is 48th data value

Some tortoises are measured.

The lengths are in the table.

(a) What is the modal class?

(b) What is the median class?

(c) Another tortoise is measured at 15cm.

Which group would this fit into?

(a) modal class 15≤t<20

(b) median 15≤t<20

(c) 15≤t<30

Height of calf(cm)	Frequency	
120≤t<130	12	
130≤t<140	33	
140≤t<150	34	
150≤t<160	13	

mode is most common

median is half way through the 92 data items
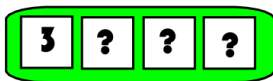
median is 46th data value

Some calves are measured.

The heights are in the table.

(a) What is the modal class?

(b) What is the median class?

(c) Another calf is measured.

This new result will change the mode.

What could the height be?

(a) modal class 140≤t<150

(b) median 140≤t<150

(c) 20<t≤30

3 ? ? ?

Connor has a combination padlock that has 4 dials.

Each dial has the numbers 0 to 9 on it.

He has forgotten the combination to unlock it.

However, he knows that it starts with a 3.

How many different combinations are possible?

There is only 1 possible for the 1st digit

1st digit   2nd digit   3rd digit   4th digit

only 1   x 10 possible x 10 possible x 10 possible

=1000 possible combinations

? ? 7 7
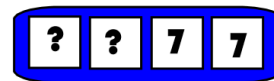
Ella has a combination padlock that has 4 dials.

Each dial has the numbers 0 to 9 on it.

She has forgotten the combination to unlock it.

However, she knows that it ends with 77.

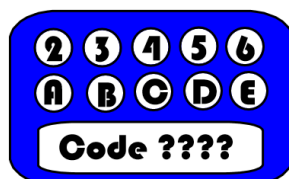How many different combinations are possible?

If it ends in 77 then

1st digit   2nd digit   3rd digit   4th digit

10 possible x 10 possible x 1 possible x 1 possible

=100 possible combinations

A security keypad is shown.

Every code must have 3 numbers followed by a letter.

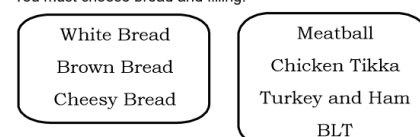Sandra has forgotten her code but remembers that the letter is E

How many different codes are possible?

2 3 4 5 6
A B C D E
Code ????

Sandra knows that it is ???E

1st digit   2nd digit   3rd digit   4th digit

5 possible x 5 possible x 5 possible x 1 possible

=125 possible combinations

Sandwich shop "Underpass" has very little choice in their menu.

You must choose bread and filling.

| White Bread |
| Brown Bread |
| Cheesy Bread |

| Meatball |
| Chicken Tikka |
| Turkey and Ham |
| BLT |

Jonny is unable to choose. How many different combinations are possible?

Bread then Filling

3 possible x 4 possible   combinations

=12 possible combinations

Sandwich shop "Underpass" has very little choice in their menu.

You must choose bread, filling and sauce.

White Bread	Meatball	Mayo
Brown Bread	Chicken Tikka	Hot Chilli
Cheesy Bread	Turkey and Ham	South West
	BLT	

Rachel is unable to choose. How many different combinations are possible?

Bread then Filling then Sauce

3 possible x 4 possible x 3 possible combinations
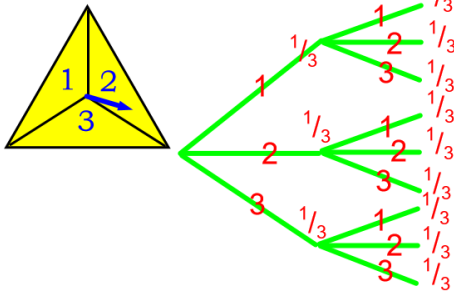
=36 possible combinations

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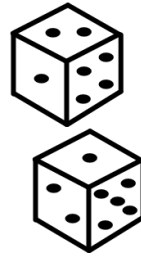
2 normal fair dice are thrown one after the other.

Fill in the probability tree.
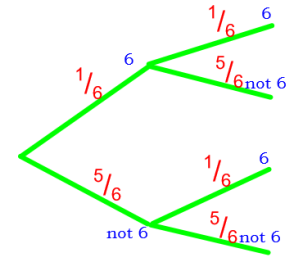
What is the probability of getting two 6's?

P(6 and 6) = $\frac{1}{6}$ x $\frac{1}{6}$ = $\frac{1}{36}$

This spinners is spun twice. The scores are added together.

Fill in this probability tree.

What is the probability of scoring total of 2?

P(total is 2)= P(1 and 1) = $\frac{1}{3}$ x $\frac{1}{3}$ = $\frac{1}{9}$

A counter is taken from Bag A

Then a counter is taken from Bag B

Fill in this probability tree.

Find the probability of getting 2 yellow.

P(2 Yellow)= P(Y and Y) = $\frac{4}{6}$ x $\frac{1}{2}$= $\frac{4}{12}$


Steve is playing a game of tennis then a game of darts.

The probability he wins the tennis is $\frac{3}{10}$

The probability he wins the darts is $\frac{7}{10}$

Complete the probability tree diagram.
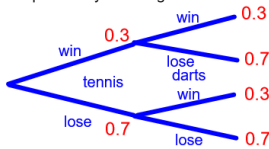

What is the probability that he wins both games?

P(Steve wins both games) = P(win and win)

= P(win) x P(win) = 0.7 x 0.3 = 0.21

Steve is playing a game of tennis then a game of darts.

The probability he wins the tennis is 0.8

The probability he wins the darts is 0.2
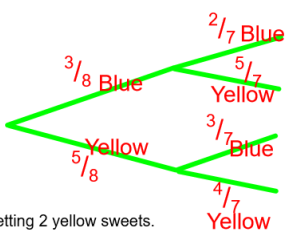
Complete the probability tree diagram.
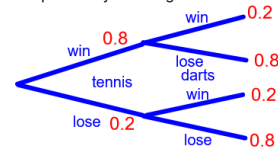
What is the probability that he wins both games?

P(Steve wins both games) = P(win and win)

= P(win) x P(win) = 0.8 x 0.2 = 0.16
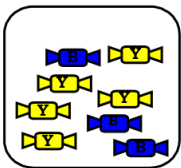
Some sweets are in a jar.

A sweet is chosen at random.

It is eaten.

Then another is picked and eaten.

Find the probability of getting 2 yellow sweets.

P(Y and Y)= $\frac{5}{8}$ x $\frac{4}{7}$ = $\frac{20}{56}$

The probability it snows on Monday is 0.8

If it snows then the probability it snows on the next day is 0.9

If it does not snow then the probability it snows on the next day is 0.7

Fill in the probability tree diagram for Monday and Tuesday.
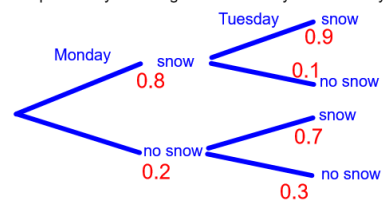
Then calculate the probability there is no snow on Monday or Tuesday.

P(no snow and no snow) = 0.2 x 0.3 = 0.06