

BlackBerry 9900 Bold



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12 month contracts	£20/month	500	5000	500MB	£370	Add to basket
24 month contracts	A £20/month	250	5000	500MB	£185	Add to basket
	B £25/month	500	5000	500MB	£50	Add to basket
	C £30/month	500	5000	500MB	FREE	Add to basket
	£35/month	1000	5000	500MB	FREE	Add to basket
	£40/month	1500	5000	1GB	FREE	Add to basket

Choosing a mobile phone contract

Some contracts have a higher up-front cost for the phone, but a lower cost per month. Others charge little or nothing for the handset, but you pay more every month.

We need to work out which contract would be the cheapest in the long run.

1. Complete the tables below, and construct a formula for the total cost after M months:

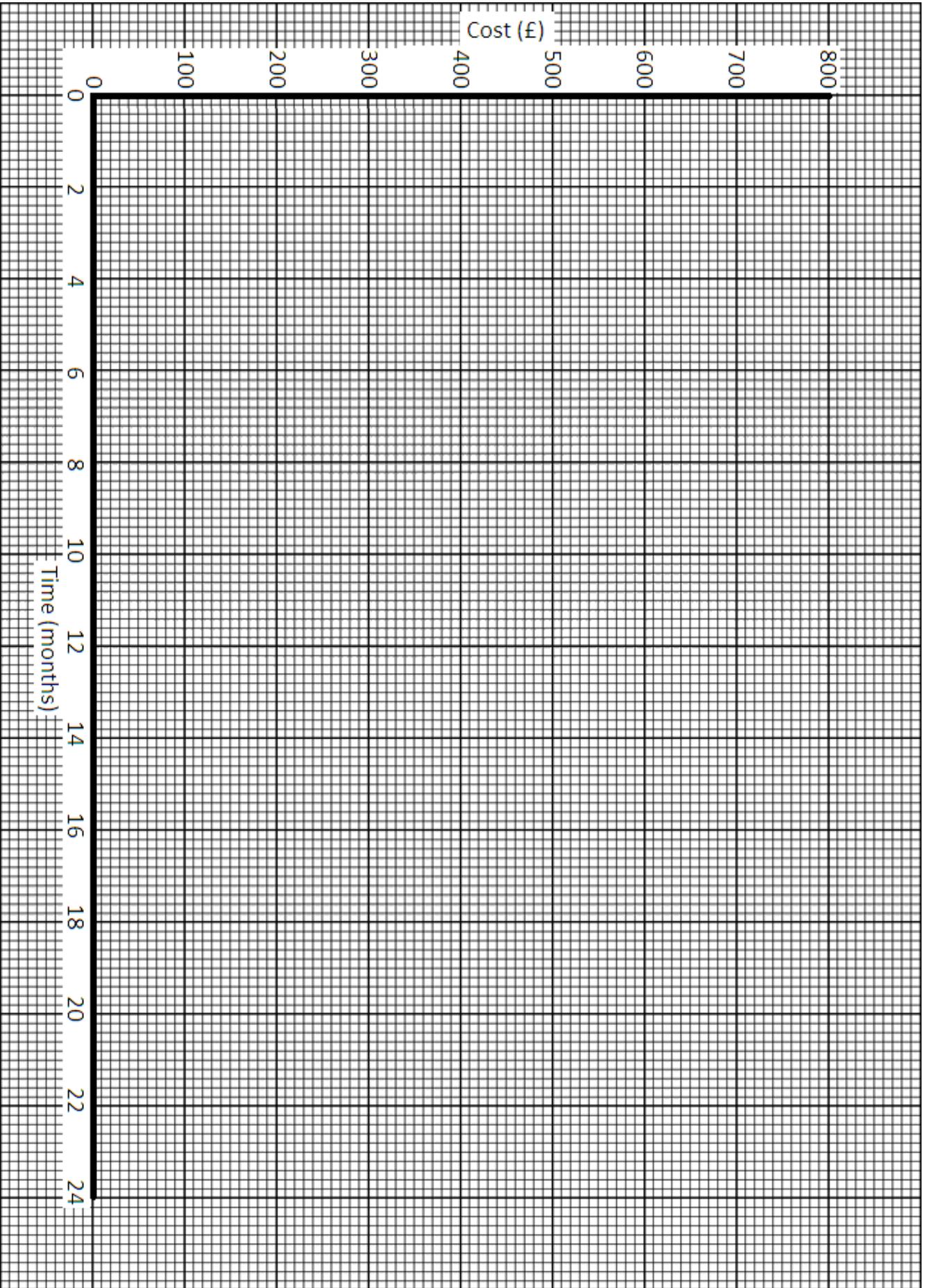
Tariff A £185 up front £20 per month	
Months	Total cost so far
0	£
1	£
2	£
3	£
4	£
...	...
M	£

Tariff B £50 up front £25 per month	
Months	Total cost so far
0	£
1	£
2	£
3	£
4	£
...	...
M	£

Tariff C £0 up front £30 per month	
Months	Total cost so far
0	£
1	£
2	£
3	£
4	£
...	...
M	£

2. Use $M = 12$ to see which plan would have cost you the most after the first 12 months.
3. Use $M = 24$ to see which plan would be the best by the end of the full 24 month contract.
4. Draw a graph for each of these on the graph paper on the back of this sheet.

Now write your conclusion about which is the best plan in the long run:



Choosing a mobile phone contract - SOLUTIONS

Some contracts have a higher up-front cost for the phone, but a lower cost per month. Others charge little or nothing for the handset, but you pay more every month.

We need to work out which contract would be the cheapest in the long run.

Complete the tables below, then draw a graph showing the total amount spent after each month on these three different tariffs:

Tariff A £185 up front £20 per month	
Months	Cost so far
0	£185
1	£205
2	£225
3	£245
4	£265
...	...
M	$185 + 20M$

Tariff B £50 up front £25 per month	
Months	Cost so far
0	£50
1	£75
2	£100
3	£125
4	£150
...	...
M	$50 + 25M$

Tariff C £0 up front £30 per month	
Months	Cost so far
0	£0
1	£30
2	£60
3	£90
4	£120
...	...
M	$30M$

2. Use $M = 12$ to see which plan would have cost you the most after the first 12 months.

$$A: 185 + 20(12) = 425 \quad (B: 50 + 25(12) = 350, \quad C: 30(12) = 360)$$

3. Use $M = 24$ to see which plan would be the best by the end of the full 24 month contract.

$$B: 50 + 25(24) = 650 \quad (A: 185 + 20(24) = 665, \quad C: 30(24) = 720)$$

4. Draw a graph for each of these on the graph paper on the back of this sheet.

Now write your conclusion about which is the best plan in the long run:

Tariff B is the best – it costs £15 less in the long run than tariff A, and £70 less than tariff C.

Not only is it the cheapest, but it comes with the same number of minutes in the monthly allowance as tariff C, and 250 more minutes than tariff A.

