

1. Key C Skill set: table reading, calculating mean.
 In weeks 1 + 2 + 3 the opening price is $24 + 34 + 30 = 88$.
 If the mean is 29, the value for the four weeks must be $29 \times 4 = 116$, so in Week 0 the opening price is $116 - 88 = 28p$

2. Key D Skill set: addition/subtraction, multiplication, table reading.
 The offer price on the W2 Mon is $34p + 2p = 36p$, so to buy 10,000 will cost $0.36 \times 10,000 = \text{£}3,600 + \text{£}22 \text{ charges} = \text{£}3,622$; the estimated bid price on W4 Mon is $36p - 2p = 34p$, so the investor will receive $0.34 \times 10,000 = \text{£}3,400 - \text{£}14 \text{ charges} = \text{£}3,386 = \text{£}236 \text{ loss}$

3. Key C Skill set: multiplication/division, table reading.
 Most cands may simply multiply the number of shares $\times 30p$ but the bid price on 1 Oct was $30p - 2p = 28p$ so the value of the company was in fact $100,000,000 \times 0.28 = 28,000,000$

4. Key E Skill set: addition/subtraction, multiplication, percentages, table reading.
 The value of the company changed from $(24 - 2 = 22) \times 100,000,000$ in W1 to $(32 - 2 = 30) \times 100,000,000$ on the Monday in W5 so the percentage change is $8/22 = 36\%$

5. Key B Skill set: table reading/ addition-subtraction.
 1907 travel times were Ilter Bridge - Ilter Downs $20 - 2 = 18$; Ilter Downs - Ilter Junction 14; Ilter Junction - Jadsey Park $26 - 2 = 24$; Jadsey Park - Kendleton = 14,
 So $18 + 14 + 24 + 14 = 70$ 2007 travel times were Ilter Bridge - Ilter Downs $29 - 2 = 27$; Ilter Downs - Ilter Junction 21; Ilter Junction - Jadsey Park $38 - 2 = 36$; Jadsey Park - Kendleton = 21, So $27 + 21 + 36 + 21 = 105$ – therefore difference is $105 - 70 = 35 \text{ mins}$

6. Key A Skill set: addition/subtraction, multiplication, table reading
 Farrsgate to Gerrenal took $12 - 2 = 10$ mins at 60 mph in 1907, so is a distance of 10 miles; takes $17 - 2 = 15$ mins to complete the 10 miles in 2007 = $10 \times 60/15 = 40\text{mph}$

7. Key D Skill set: multiplication/division, table reading
 In 1907 Ilter Road to Ilter Junction took $10 - 2 = 8$ mins at 60mph, so this is a distance of 8 miles.
 In 1907 Ilter Downs to Ilter Junction took 14 mins at 60mph, so this is a distance of 14 miles.
 Therefore the distance from Ilter Junction to Ilter Road is $14 - 8 = 6$ miles less than that to Ilter Downs.

8. Key D Skill set: addition/subtraction, multiplication, table reading

In 1907 it took 14 minutes to travel at 60mph from Jadsey Park to Kendleton, so the journey is 14 miles. The single fare rate is 60p per mile. So a ticket costs $14 \times 0.6 = \text{£}8.40$. So the single fare from Kendleton to Jadsey Park is therefore $\text{£}16.80$. So the return fare is $(\text{£}8.40 + \text{£}16.80 = \text{£}25.20)$ less 10% $(\text{£}2.52) = \text{£}22.68$

9. Key C Skill set: table reading, addition/subtraction, division
With $1\$ = 50 \text{ p}$ in the US, the total expenditure at the NY store would be $\$1200 + \$1400 + \$200 + \$208 + \$190 = \3198 , which is $\text{£}1,599$ in pounds.
With $\text{£}1 = 1.5 \text{ EURO}$ in the Brussels store, the total expenditure there would cost $1100 + 1200 + 165 + 120 + 180 = 2765 \text{ Euros} = \text{£}1843.3$ so, rounded up, the total price would be $\text{£}1844$.
Buying in New York would be cheaper, therefore, by $1844 - 1599 = \text{£}245$
10. Key A Skill set: addition/subtraction, multiplication/division, table reading
Taking account of currency conversion, discounts, etc, the respective 'deals' on offer are: NY $\text{£}100$; Brussels $\text{£}110$; UK Internet $120 \times 0.5 = \text{£}60 + \text{£}100 = \text{£}160$; Local shops $140 \times 0.75 = \text{£}105$;
Wholesaler $145 \times 0.8 = \text{£}116$ - so NY is the answer
11. Key E Skill set: addition/subtraction, multiplication/division, table reading
Taking account of currency conversion, discounts, etc, the respective 'deals' on offer are: NY $\text{£}104$; Brussels $\text{£}80$; Local shops $102 \times 0.75 = \text{£}76.50$;
Wholesaler $101 \times 0.8 = \text{£}80.80$ - so the highest price is $\text{£}104$ and the lowest $\text{£}76.50$ and the difference between them is $\text{£}104 - \text{£}76.50 = \text{£}27.50$
12. Key D Skill set: addition/subtraction, multiplication, percentages, table reading
Taking account of currency conversion, discounts, etc, the respective 'deals' on offer are: NY $\text{£}700$; Brussels $\text{£}800$; UK Internet $(1200 \times 0.5 = 600) + \text{£}100 = \text{£}700$; Local shops $900 \times 0.75 = \text{£}675$ - so the highest price is $\text{£}800$ and the lowest $\text{£}675$ - expressing the difference between the highest and lowest as a % of the lowest price gives us - $(800 - 675) / 675 = 18.518\%$
13. Key C Skill set: money, multiplication/division, addition/subtraction, table reading
Take away personal allowance - $37000 - 5035 = \text{£}31965$. Tax at 10% on 2150 = $\text{£}215$. Tax at 22 % on $(31965 - 2150) = 0.22 \times 29815 = \text{£}6559.30$. Total tax deducted = $\text{£}215 + \text{£}6559.30 = \text{£}6774.30$
14. Key D Skill set: money, multiplication/division, addition/subtraction, table reading
His income tax for that year would have been:
Deduct p.a. $(37000 - 5225) = 31775$.
Tax at 10% on $\text{£}2230 = \text{£}223$
Tax at 22% on $\text{£}31775 - 2230 = \text{£}29545 \times .22 = 6499.90$
Total income tax = $223 + 6499.90 = 6722.90$
With the performance bonus he receives an extra $\text{£}4000$, i.e $\text{£}41000$
Deduct p.a. $(41000 - 5225) = \text{£}35775$

This takes him into the higher rate band
 So tax at 10% on 2230 = £223
 Tax at 22% on (34600- 2230) 32370 = £7121.40
 Tax at 40% on (35775 – 34600) = £470
 Total income tax = 223 + 7121.40 +470 = £7814.40
 Increase in his tax is £7814.40 – 6722.90 = £1091.50

15. Key B Skill set: money, multiplication/division, addition/subtraction, table reading

Deduct p.a. $42000 - 5225 = 36775$;
 Income tax on first 2230 = £223
 Income tax at basic rate = 7121.40
 Income tax at higher rate $(42000-5225-34600) \times 0.4 = £870$
 Total annual income tax = £8214.40
 Therefore average monthly tax deduction = $8214.40/12 = £684.53$

16. Key B Skill set: money, multiplication/division, addition/subtraction, table reading

Chris's taxes
 Deduct p.a. $7000 - 5225 = £1775$
 Tax at starting rate = $£1775 \times .10 = £177.50$
 Therefore pay after tax is deducted is £6822.50
 Donald's taxes
 His salary is under the personal allowance for people aged 65-74, therefore he pays no tax. Therefore difference in pay after tax is deducted is £177.50

17. Key C Skill set: speed/distance/time

$(2/30 \times 60) + (10/50 \times 60) = 4 + 12 = 16$ minutes

18. Key D Skill set: speed/distance/time

(in 1.5 hrs at 70 mph) $70 \times 1.5 = 105$ miles
 (in 30 minutes at 100 mph) 50 miles
 $105 + 50 = 155$ miles

19. Key D Skill set: speed/distance/time

6 seconds uniform acceleration to 60 mph is equivalent to 6 seconds travel at 30 mph. In 6 seconds at 30 mph, car travels $30/3600 \times 6 = .05$ miles. For the rest of the lap (1.95 miles) car travels at 60 mph (i.e. 1 mile in 60 seconds) which takes $(1.95 \times 60 = 117)$ seconds. Total time for the lap is therefore $117 + 6 = 123$ seconds or 2 minutes and 3 seconds

20. Key B Skill set: speed/distance/time

In 90 seconds at 180 mph (3 miles per minute) he travels 4.5 miles; in 10 minutes at 160 mph travels he 26.66 miles; in 4 minutes at 80 mph he travels 5.33 miles. Total mileage = $4.5 + 26.66 + 5.33 = 36.5$ miles. One lap is 2 miles therefore laps completed = 18.25

21. Key C Skill set: speed/distance/time
 $(30/100 \times 10.3) + (60/100 \times 5.8) = 3.09 + 3.48 = 6.57$ litres
22. Key E Skill set: table reading, multiplication/division, addition/subtraction
 Total distance travelled = $12 \times 5 \times 2 \times 25$ Km = 3000 km
 Diesel consumption = $3000/100 \times 9.7 = 291$ litres
 Petrol consumption = $3000/100 \times 10.3 = 309$ litres
 Difference = 18 litres (of fuel)
23. Key B Skill set: table-reading, multiplication/division
 For diesel car, fuel used = $180/100 \times 5.4 = 9.72$ litres. Cost $9.72 \times 1.10 =$
 £10.69
 For petrol car, fuel used = $180/100 \times 5.8 = 10.44$ litres, cost $10.44 \times 1.01 =$
 £10.54
 Therefore use of petrol car costs $£10.69 - 10.54 = £0.15$ less
24. Key D Skill set: table-reading, multiplication/division
 For diesel car, CO₂ emissions = $189 \times 590 = 111,510$ gm/km.
 For petrol car, CO₂ emissions = $177 \times 590 = 104,430$ gm/km
 Therefore petrol car produces $111,518 - 104,430 = 7080$ gm/km less
25. Key E Skill set: reading and interpreting tables and graphs
 Note the lowest quantity purchased is in July of Year 2
26. Key C Skill sets: reading table; addition; calculation of mean
 Add purchases between April 1 and March 31, divide by 12.
 $645 / 12 = 53.75$ litres
 Note there are two months when additional purchases are made but the calculation is of a monthly mean.
27. Key D
 Cost of fuel increase March 31 - $£0.95 + 10\%$ (£0.095) = £1.045 per litre =
 £1.05
 June 30 - $£1.05 + 10\%$ (£0.105) = £1.155 per litre = £1.16
 September 30 - $£1.16 + 10\%$ (£0.116) = £1.276 per litre = £1.28
 Therefore cost of fuel in final quarter of Year 1 = £1.28 per litre
 Total fuel purchased between October 1 and December 31 = $48 + 27 + 53$ litres
 = 128 litres
 Total expenditure = $128 \text{ litres} \times £1.28 = £163.84$
28. Key B Skill sets: reading table; percentages; addition/subtraction; division
 Cost of petrol = 63% of £230.00 = 144.90.
 Amount of petrol purchased = $39 + 43 + 57 = 139$ litres
 Petrol expenditure divided by amount of petrol = $144.90 / 139 = 1.04$ p

29. Key A Skill set: Speed and units conversion
 Time = $1000/480$ or $625/300 = 2.083333$ hours = 120 + 5 minutes. 125 minutes
30. Key B Skill set: Percentage
 Old time = d/s New time = $d/1.1s$
 Percentage change = $(\text{new time} - \text{old time} / \text{old time}) \times 100 = -9.1\%$. 9%
31. Key A Skill set: Percentage
 125% of old price = £120 Old price = $£120/1.25 = 96$. Increase = $£120 - £96 = £24$
32. Key C Skill set: speed
 The Athens plane flies a distance of = 1500 km before the plane left London.
 Time to meet = $900/900 = 1$ hour
 Distance travelled from London is = 400 km so nearest to Paris.
 The local time will be $13:00 + 1 + 1 = 15:00$
33. Key E Skill set: Money
 $186 / (7 + 24) = 6$. So the total number is $6 + 12 = 18$
34. Key A Skill set: Area/Money
 $40/2 \times 24/1.5 = 20 \times 16 = 320$. 7 cent value is 2240 cents. 12 cent value is 3840 cents.
 Difference is 1600 cents or €16.00
35. Key D Skill set: Area, Money
 Superpage $80/2 \times 48/1.5 = 40 \times 32 = 12800$ stamps
 Value of the 12 cent stamps is 15360 cents
 Ratio is $2240 : 15360 = 1:7$ approximately
36. Key C Skill set: Money
 $63 = 9 \times 7$, $64 = 36 + 28 = 3 \times 12 + 4 \times 7$, $66 = 24 + 42 = 2 \times 12 + 6 \times 7$,
 $67 = 60 + 7 = 5 \times 12 + 1 \times 7$
 Taking off successive 12s from 65 never leaves a multiple of 7 (65, 53, 41, 29, 22, 15, 8, 1) and 65 is the largest such number