

## CONSUMER MATHS AND PERSONAL FINANCE YEARS 9 AND 10

- 1 A gross salary of \$810 per fortnight is the same as an annual salary of:
- A \$8,100                              B \$19,440  
C \$21,060                              D \$42,120
- 2 When it is midday in Melbourne, the time at other places is as follows:
- |                   |                 |
|-------------------|-----------------|
| Adelaide 11.30 am | Bali 9.00 am    |
| Japan 11.00 am    | Vietnam 9.00 am |
| Malaysia 10.00 am |                 |
- If it is 6.00 pm in Melbourne, then which of the following is correct?
- A It is 3.00 pm in Vietnam and Bali.      B It is 6.30 pm in Adelaide.  
C It is 4.00 am in Malaysia.                  D It is 7.00 pm in Japan.
- 3 Telephone calls for a certain customer were charged as follows:  
A fixed rental and service charge of \$42.50 is applied to each account, plus \$0.25 is charged for each local call. If the customer only made local calls, and received an account for \$180, the number of local calls made in the billing period must have been:
- A 45                              B 550                              C 720                              D 890
- 4 In her job as a supermarket supervisor, Chris is paid a set wage of \$387.50 for a 36 hour week, plus time and a half for overtime. In one particular week she worked 44 hours. Her earnings for that week were:
- A \$387.50                              B \$473.61                              C \$516.67                              D \$581.25
- 5 An estate agent sold a unit for \$175,000. If he gets  $2\frac{1}{2}\%$  commission, the amount he earnt in this sale was:
- A \$70                              B \$438                              C \$4 375                              D \$70 000
- 6 Maria works shift work at take-away food store. Last week her time card read as follows:

Day	In	Out	In	Out
Monday	8.30	12.00	12.45	4.15
Tuesday	9.00	12.30	1.15	5.00
Wednesday	8.45	12.00	12.45	4.45
Thursday	9.00	12.30	3.00	6.30
Saturday	10.00	1.00	2.00	7.00

Maria begins to get pay at a rate of time and a half once she has worked a standard 35 hour week. The amount of overtime she worked in this week was:

- A 30 minutes                              B 1 hour                              C  $1\frac{1}{2}$  hours                              D 36 hours

THE NEXT 2 QUESTIONS REFER TO THE FOLLOWING INFORMATION:

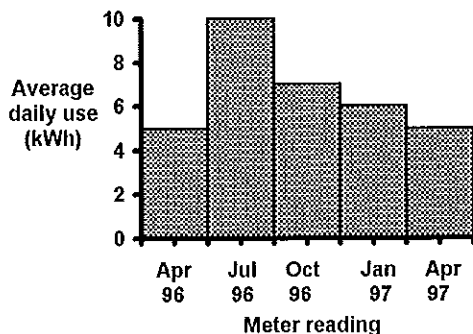
When Sue and Lisa set up a flat, part of their budget was allocated as follows:

Item	Frequency of Payment	Cost per Payment
Rental	Monthly	\$650
Electricity	Quarterly	\$128
Food	Weekly	\$120
Contents Insurance	Annually	\$425

- 7 The total amount paid on these items over one year is:  
 A \$1 323 B \$14 497  
 C \$14 977 D \$15 876
- 8 If all of the other expenses Lisa and Sue have to meet came to \$250 per week, and they decide they also need to save \$100 a week towards holidays and any unexpected expenses, their minimum joint weekly take home salary should be (to the nearest dollar):  
 A \$288 B \$638 C \$655 D \$681
- 9 A used car salesman offers a customer a deal on a \$13 000 car. The customer must pay 10% deposit, and can pay off the rest of the car in monthly instalments of \$450 per month for 3 years. The total interest earned by the credit company under this scheme is:  
 A \$3 200 B \$4 500 C \$16 200 D \$17 500

THE NEXT 4 QUESTIONS REFER TO THE FOLLOWING INFORMATION:

An electricity account issued to a customer on 16 April, 1997, showed a graph of the customer's average daily usage of electricity, which is measured in kilowatt hours (kWh).



- 10 This graph shows that the customer's electricity meter is read:  
 A 5 times a year  
 B Every 3 months  
 C Every 2 months  
 D Every day

- 11 The graph showed:  
 A That in July 1996 the customer used 8kWh of electricity.  
 B That for the billing period for which the meter is read in July, more electricity is used than for the rest of the year put together.  
 C That on average, each day the customer used twice the amount of electricity in Winter than was used around Autumn.  
 D None of the above conclusions can be drawn from this graph.

- 12 This electricity account also showed that the customer only used electricity during peak hours, and consumed 510 kWh of electricity, which is charged at a peak rate of 11.97c per kWh. There was also a service charge of \$34.20. The total account must have been:
- A \$61.05                      B \$92.25                      C \$6 104.70                      D \$6 138.90
- 13 The customer used a 1500 watts per hour hairdryer on its highest setting for a total of 10 hours in this billing period. The number of kWh this would have contributed to the bill would have been:
- A 150 kWh                      B 15 kWh                      C 1.5 kWh                      D 0.15 kWh
- 14 A worker earns \$695.50 per week as his gross salary. However, 5% superannuation and 30% taxation, as well as \$10 in Union Fees, are deducted. His net take home pay is:
- A \$442.08                      B \$445.58                      C \$452.51                      D \$455.86
- 15 A lottery winner decides to invest \$50,000 in an investment scheme in which 14% p.a. simple interest is given. At the end of 10 years his money will have grown to:
- A \$57 000                      B \$70 000                      C \$120 000                      D \$185 361
- 16 A jacket, normally priced at \$96.50, was discounted at a sale, and the sale price was \$38.75. This percentage discount given was closest to:
- A 30%                      B 40%                      C 50%                      D 60%
- 17 A shirt was advertised at a sale price of \$29.95, and the brochure stated that this was at a discount of 20%. The original price of the shirt must have been:
- A \$6.00                      B \$23.95                      C \$37.45                      D \$149.75
- 18 Tori inherited \$5 000 from her grandmother and decided to invest her gift in a scheme in which the interest is posted out as a cheque each Christmas. The interest is calculated once a year. What must be the rate of the interest if she wants to receive an interest cheque of \$750 each Christmas?
- A 5% p.a.                      B 10% p.a.                      C 12.5% p.a.                      D 15% p.a.
- 19 A big audio chain offers Kate a CD system for \$1200 cash or else she may choose to buy it under a hire purchase scheme which involves a deposit of \$200 and weekly payments of \$12.50 over the next two years. The amount Kate would save by paying cash is:
- A \$100                      B \$200                      C \$300                      D \$400

- 20 A dealer quotes the cash price of a second hand gold detector as \$600. If a hopeful gold prospector pays a deposit of \$120, and then makes weekly payments of \$12.25 over the next 12 months, the flat rate of interest he ends up paying on the loan is closest to:
- A 3% p.a.                      B 26% p.a.                      C 33% p.a.                      D 133% p.a.
- 21 An electrical goods manufacturer produces a certain line of electrical kettles for \$35.50. These are sold to retail chain for \$47.25, who then charge customers \$69.50 for the kettle. The total percentage mark up paid by the customer is:
- A 47%                              B 51%                              C 96%                              D 196%
- 22 Dave decides to invest \$15,000 at a compound interest rate of 9% p.a., calculated annually. Over 4 years his investment will grow to (to the nearest dollar):
- A \$20 400                              B \$21 174  
C \$65 400                              D \$195 482

THE NEXT 2 QUESTIONS REFER TO THE FOLLOWING INFORMATION:

The table below shows the monthly mortgage payments on loans from \$50 000 to \$60 000, to be repaid over 25 years, at various interest rates for a particular bank.

**25 Year Mortgage Loan Amounts**

Rates	50 000	52 000	54 000	56 000	58 000	60 000
13.50	582.82	606.14	629.45	652.76	676.07	699.39
13.75	592.33	616.03	639.72	663.41	687.11	710.80
14.00	601.88	625.96	650.03	674.11	698.18	722.26
14.25	611.46	635.92	660.38	684.84	709.30	733.76
14.50	621.08	645.93	670.77	695.61	720.45	745.30
14.75	630.73	655.96	681.19	706.42	731.65	756.88
15.00	640.41	666.03	691.65	717.26	742.88	768.50

- 23 Mary and Jim took out a loan of \$50,000 at 13.50% for 25 years with this bank. If they only kept to the repayment schedule and did not make any additional payments, the total interest earned by the bank from their loan would be:
- A \$118 750                              B \$124 846  
C \$168 750                              D \$174 846
- 24 This bank has a policy that it won't lend customers any amount which would require them to pay more than 40% of their net salary servicing their loan. If Scott earns a net salary of \$1600 per month, the maximum loan he can afford at the current interest rate of 13.50% is:
- A \$50 000                              B \$52 000  
C \$54 000                              D higher than those shown on the table

- 25 If the bank suddenly announced an increase in interest rate from 13.50% to 15.00%, a person on a \$60,000 loan would be faced with a percentage increase in monthly repayments of:
- A 1.50%                      B 9.8%                      C 9.9%                      D 110%
- 26 During a big promotion, a well-known jeweller was offering 80% off a pair of gold earrings which were valued at \$250. This meant that the customer would pay:
- A \$50                      B \$170                      C \$200                      D \$230
- 27 As the Manager of a Finance Company, you set a policy that you will make a profit of 20% on any loan of less than \$10,000, which is repaid within 2 years. If you lend a customer \$5000, and set monthly repayments over a 2 year period, to earn your required profit you will need to make the monthly repayments:
- A \$208.33                      B \$216.67                      C \$250                      D \$300
- 28 At a recent sale, Jim decided to put a new Panasonic 4 Head stereo video cassette player, which was on special at \$645, on layby. Under the shop's layby scheme, he had to pay 10% deposit, and the balance off in 1 year. To pay it off in time, Jim would have monthly repayments of:
- A \$48.40                      B \$52.90                      C \$53.75                      D \$59.15
- 29 If you invest \$10 000 for 6 years at 12% compound interest per annum, calculated quarterly, the amount of interest you would earn over the 1st year would be:
- A \$1 200    B \$1 255.09  
C \$7 200    D \$10 328
- 30 A certain magazine company has a very strong marketing campaign in which those who purchase items from them are entered in a "Free Draw". To entice their potential customers, they send a table showing how much their prize money of \$100 000 would grow if it was invested in a scheme which paid R% p.a., calculated annually. Part of the figures they supply are:

YEAR	INTEREST RATE AT R% p.a.	BALANCE
1	-	100 000
2	7 000	107 000
3	7490	114 490
4	X	

The values of R and X must be (respectively):

- A 7 and 7 980    B 7 and 8 014  
C 0.007 and 8014    D R and X cannot be deduced without further information

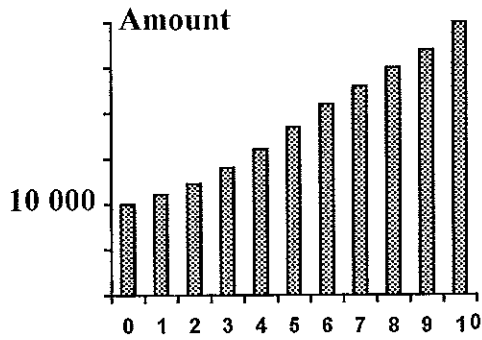
THE NEXT 3 QUESTIONS REFER TO THE FOLLOWING INFORMATION:

These graphs represent the amount 4 different customers have in their account at a certain bank, over a period of 10 years.

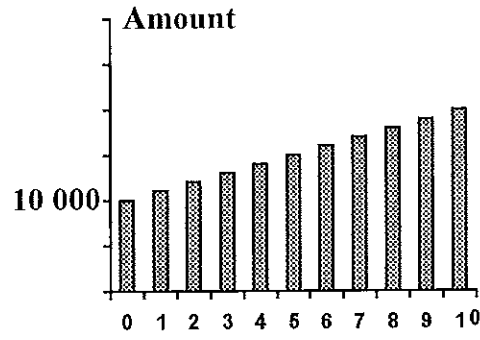
Each customer has chosen a different investment scheme.

The amount has been recorded on 31 December each year.

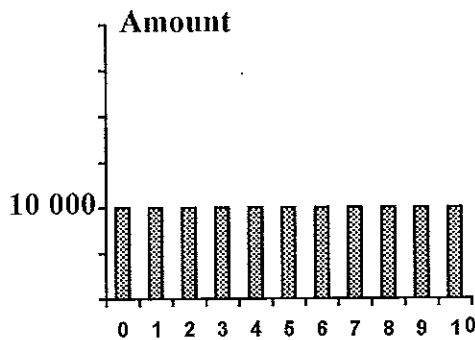
All 4 customers initially invested \$10 000 and interest is calculated annually.



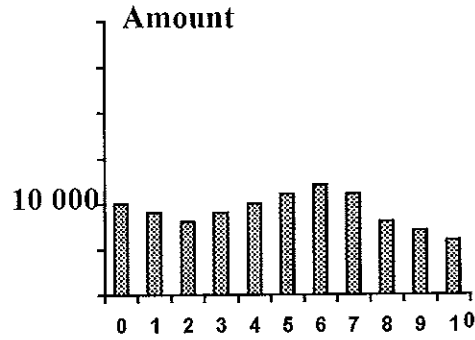
Graph I



Graph II



Graph III



Graph IV

31 One bank client decides to receive an annuity - that is, the interest is posted out to him to use for living expenses, but the capital is untouched. The graph which represents the amount in his bank account over time is:

- A Graph I      B Graph II      C Graph III      D Graph IV

32 Another client has her money invested in a compound interest scheme. The graph which represents the amount in her bank account over time is:

- A Graph I      B Graph II      C Graph III      D Graph IV

33 A third client has sometimes had to take advantage of the bank's offer to have 20% at call, due to various unexpected personal expenses. The graph which represents the amount in his bank account over time is:

- A Graph I      B Graph II      C Graph III      D Graph IV

- 34 When you sell a house, the government charges you a form of taxation called stamp duty. Part of the table supplied by the government in one particular year was:  
On the value of the property, for every \$100 or portion thereof

Where it exceeds \$40 000 but not \$100 000	2.20
Where it exceeds \$100 000 but not \$125 000	3.00
Where it exceeds \$125 000 but not \$150 000	3.50
Where it exceeds \$150 000 but not \$200 000	3.75

Using the information in this table, the amount of stamp duty you would need to pay on a house which you sold for \$145 990 is:

- A \$5 106.50                      B \$5 109.65  
C \$5 110                          D \$5 475
- 35 Craig is about to buy his first car. He has seen several options in the used car market which interest him. He has savings of \$1 500 and needs to take the rest of the cost out as a loan, but can't afford any more than \$150 per fortnight. These were the deals offered to him which he could afford at one car yard.

Car	Value	Fortnightly repayment	Time of loan (years)
1980 Toyota Corolla	\$4 100	\$135	1
1985 Holden Premier Stationwagon	\$6 200	\$110	2
1982 Ford Panel Van	\$5 000	\$85	2
1981 Mitsubishi Lancer	\$4 800	\$110	1½

The deal which would lead to Craig paying least amount of interest to the finance company would be:

- A The Toyota                      B The Holden  
C The Ford                          D The Mitsubishi
- 36 A bank client decided to invest \$20 000 in a scheme in which compound interest was offered at 14% p.a., calculated quarterly, for a period of 10 years. The amount of interest she would earn is:

- A \$29 777                          B \$54 144  
C \$59 185                          D \$79 185

- 37 A manufacturer finds that the wholesale price for a certain line of televisions must be increased by 7.5%, to cover the increased cost of parts, If the new wholesale price is now \$1 150, the original price must have been:

- A \$86.25                            B \$1 063.75  
C \$1069.77                        D \$1 236.25

THE NEXT 3 QUESTIONS REFER TO THE FOLLOWING INFORMATION:

The tables below show a part of a deal on insurance offered to male clients by one major insurance company. A client might opt to take out between \$20 000 and \$100 000 insurance, and pays the insurance premiums monthly. These premiums depend on the gender of the client and whether he or she smokes or not.

Non-smoker monthly rates

Age last birthday	\$20 000	\$40 000	\$50 000	\$60 000	\$80 000	\$100 000
20-29	5.20	8.30	9.20	10.60	13.50	16.40
30-34	5.40	8.80	9.70	11.30	14.40	17.50
35-39	6.20	10.50	11.60	13.60	17.40	21.30
40-44	7.90	13.90	15.50	18.20	23.60	29.00
45-49	11.30	20.60	23.10	27.30	35.70	44.20
50-54	17.80	33.50	37.80	45.00	59.30	73.60

Smoker monthly rates

Age last birthday	\$20 000	\$40 000	\$50 000	\$60 000	\$80 000	\$100 000
20-29	7.00	11.90	13.30	15.50	20.00	24.50
30-34	7.90	13.80	15.40	18.10	23.50	28.90
35-39	9.50	17.10	19.10	22.60	29.40	36.30
40-44	12.80	23.60	26.60	31.50	41.30	51.20
45-49	19.00	36.10	40.70	48.50	64.00	79.40
50-54	30.00	58.10	65.70	78.50	104.00	129.50

The insurance coverage which the client elects to take is paid out in full if the client dies or is totally and permanently disabled.

- 38 Over a 12 month period, a 45 year old male smoker who takes a \$50 000 policy with this company will pay a total premium of:
- A \$23.10                                      B \$40.70  
 C \$277.20                                      D \$488.40
- 39 A non-smoking male took out a \$100 000 insurance policy on his 50th birthday. The day before his 54th birthday, tragically he was killed by a drunken driver. This represented a net loss to the insurance company of:
- A \$93 784                                      B \$96 467.20  
 C \$98 233.60                                      D \$100 000
- 40 This table, which is devised by insurance actuaries on the basis of statistics, implies that:
- A A 20 year old smoker has about a 50% greater chance of dying than a 20 year old non-smoker, irrespective of the amount of insurance coverage he needs to have.  
 B A 50 year old smoker on a \$100 000 policy, could be more than 5 times more likely to make a claim than when he was 20 years old.  
 C Males of any given age are more likely to make a claim if they cover themselves for a higher amount of insurance.  
 D As men get older, insurance companies charge them more because they have an increased ability to pay.



## ANSWERS TO CONSUMER MATHS

1	C	2	A	3	B	4	C	5	C	6	C
7	C	8	B	9	B	10	B	11	C	12	B
13	B	14	A	15	C	16	D	17	C	18	D
19	C	20	C	21	C	22	B	23	B	24	C
25	C	26	A	27	C	28	A	29	D	30	B
31	C	32	A	33	D	34	C	35	A	36	C
37	C	38	D	39	B	40	B				