

# Focus Study Driving 1 (FSDr1)

## Costs of Purchase and Insurance



Name .....

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- Calculate the Percentage Decrease in the Value of a New Vehicle after One Year

To find the percentage decrease of an item:

 **Formula**

$$\text{Percentage Decrease} = \frac{\text{difference}}{\text{original amount}} \times 100$$

This formula is **NOT** provided in the HSC

 **Example 1**

A 2012 BMW X3 is currently valued at \$58 000 and was purchased for \$63 000. Calculate the percentage decrease of the value of the vehicle of the car.

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 **Example 2**

A Honda Civic lost 15% of its original value after one year. If is currently worth \$24 000, what was it worth one year ago?

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 **Activity**      see below

Calculate the percentage decrease in the price of a new vehicle after one year.

- a** Purchase price is \$25 500. Market value after one year is \$21 420.
- b** Purchase price is \$36 800. Market value after one year is \$27 600.
- c** Purchase price is \$54 250. Market value after one year is \$48 825.
- d** Purchase price is \$23 826. Market value after one year is \$20 900.

- a** 16%
- b** 25%
- c** 10%
- d** 12.3%

- **Describe (provide characteristics and features of) the Different Types of Insurance Available, including Compulsory and Non-Compulsory Third-Party Insurance, and Comprehensive Insurance**

#### Compulsory Third Party

- Also known as CTP insurance or your 'green slip' (since the form is green)
- You can't drive a car without this insurance. It is an essential part of the annual registration process.
- If your car is more than 5 years old, you also need to get an E-Safety check or 'pink slip' to ensure your car is roadworthy.
- The purpose of this insurance is to provide compensation for other people injured in an accident if you or the person driving your vehicle is 'at fault'.
- This insurance covers passengers and other road users injured in an accident, including pedestrians and cyclists.
- This insurance does NOT cover the driver of the vehicle 'at fault' or damage to other vehicles or property.

#### Third-Party Property (Non-Compulsory)

- This insurance covers damage caused to other vehicles and property in an accident.
- This insurance does NOT pay for damage to the car of the driver 'at fault'.
- This is more expensive than the CTP insurance but less expensive than taking out comprehensive car insurance.

#### Third-Party Property – Fire and Theft – Insurance (Non-Compulsory)

- This insurance covers damage caused to other vehicles and property in an accident.
- This insurance also covers theft and fire damage.

#### Comprehensive (Non-Compulsory)

- This insurance covers damage to all vehicles in an accident and any possible property damage.
- This insurance also covers theft, attempted theft, accidental loss, fire damage, vandalism and hail damage.
- This is the most expensive form of insurance.

Non-Compulsory Insurance requires you to pay a 'premium' each year. Your 'premium' can vary depending on age, driving record, type of vehicle and the suburb you live in.

If you have to use your non-compulsory insurance, you will have to pay an 'excess' upfront to cover the initial costs of repair. The insurance company will pay for the rest.

 **Example 3**

Complete the following table by placing a tick or cross in each of the boxes for what is covered by each type of insurance when you are the driver at fault.

	Damage to your car	Damage to the other car	Damage or loss caused by theft	Injury or death of other people in an accident
Comprehensive				
Third Party Property				
Compulsory Third Party				
Third Party Property – Fire and Theft				



**H.S.C. Question (4)**

Brian owns a car.

Which of the following is included in the cover of compulsory third-party insurance for his car?

- (A) Theft of his own car
- (B) Injury to passengers
- (C) Damage to his own car
- (D) Damage to another driver's car

- **Compare** (show how things are similar or different) **Regional Theft Statistics and the Related Cost of Insurance**
- **Analyse** (Identify components and the relationship between them; draw out and relate implications) **Theft and Accident Statistics in Relation to Insurance Costs**

 **Example 5**

(a) Go to the NRMA website: <http://www.nrma.com.au/car-insurance>

(b) Calculate the cost of comprehensive car insurance using the following information at the two addresses provided.

Vehicle: 2012 Holden Commodore Sedan 6.0L owned outright with an alarm and an immobiliser.

Driver: Male, started driving at 18, born on 17 September 1985.

Address	Cost of Comprehensive Car Insurance
3 Durham St Hunters Hills 2110	
3 Colbeck St Tregear 2770	

(c) Examine the information provided below.

Offence	Hunters Hill		Tregear	
	Apr 2011 – Mar 2012	Apr 2012 – Mar 2013	Apr 2011 – Mar 2012	Apr 2012 – Mar 2013
Motor Vehicle Theft	28	12	1107	861
Stealing items from a Motor Vehicle	77	67	2361	2394

Compare the crime trends for these two suburbs in relation to the cost of comprehensive car insurance that you found in (b).

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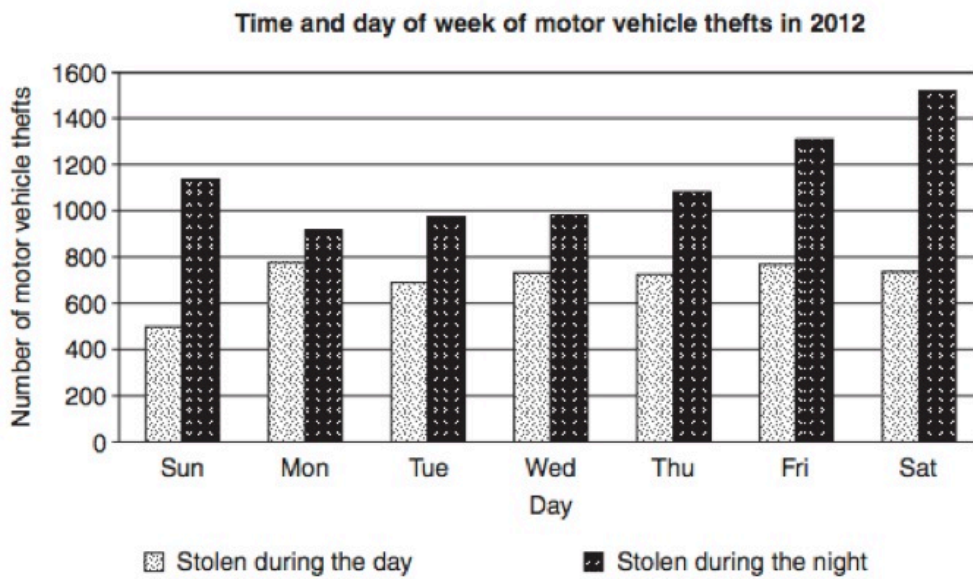
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### H.S.C. Question (6)

The graph shows data on motor vehicle theft in a city during 2012.

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What trends about motor vehicle theft in this city during 2012 can be observed from the graph?

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 **Activity** Ex 8.01 ALL

- Calculate the Cost of Stamp Duty Payable using Current Rates (Note: this is a stepwise linear function)
- Create a Line Graph showing the Stamp Duty payable on Vehicles of Various Prices (Note: this is a stepwise linear function)

Stamp Duty

- A tax that is paid to The Office of State Revenue when you buy a new or used vehicle.
- It is calculated on the market value of the vehicle or the amount it was purchased for, whichever is greater.
- It is charged at a rate of:
  - ❖ 3% of the value of the vehicle up to \$45 000 plus
  - ❖ 5% of the value over \$45 000

 **Example 7**

Calculate the stamp duty of a vehicle that is worth:

(a) \$21 900

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(b) \$49 000

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 **Example 8**

In a particular state no stamp duty is paid on vehicles that cost less than \$6 000. The stamp duty on a car valued at \$6 000 or more attracts a stamp duty charge of \$10 for every \$200 or part thereof its value. Find to the nearest dollar the stamp duty payable on a vehicle that costs \$72 320.

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 **Example 9**

Draw a graph that would represent the amount of stamp duty payable using these rates:

- ❖ 3% of the value of the vehicle up to \$45 000 plus
- ❖ 5% of the value over \$45 000

Market Value of Vehicle	\$0	\$20 000	\$40 000	\$45 000	\$60 000	\$80 000
Stamp Duty Payable						

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 <b>Activity</b> Ex 8.02 ALL
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- **Determine the Monthly Repayments on a Reducing Balance Personal Loan using Tables or an Online Calculator**
- **Compare the Sale Price of a Car and the Total Amount Repaid over the Period of a Loan**

Some people need to borrow money from a bank or lender to purchase a car. Often, a table or online calculator is used to determine the amount of a monthly repayment to pay back these loans.

Loans from a bank are called reducing balance loans because interest is only calculated on the amount owing and not on the total amount.

 **Example 10**

Aaron decides to purchase a \$72 000 vehicle. He places a \$2 000 deposit down on the vehicle and borrows the balance at a rate of 7% per annum over 20 years.

MONTHLY REPAYMENT TABLE						
Principal and interest per \$1000 borrowed						
Interest rate (pa)	Term of loan – years					
	5	10	15	20	25	30
6.5%	19.57	11.35	8.71	7.46	6.75	6.32
7.0%	19.80	11.61	8.99	7.75	7.07	6.65
7.5%	20.04	11.87	9.27	8.06	7.39	6.99
8.0%	20.28	12.13	9.56	8.36	7.72	7.34

**(a)** Use the table to find Aaron’s monthly repayment on the loan.

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**(b)** How much money will Aaron end up paying back on the loan?

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**(c)** How much interest will Aaron pay?

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 **Example 11**

Carly would like to buy a luxury vehicle worth \$110 000. She takes the entire amount out on a loan at 7.49% per annum for 16 years.  
Calculate how much more she will pay for the vehicle by borrowing the money as opposed to paying the cash price for the vehicle.

**Monthly Loan Repayments (7.49% p.a.)**

Principal \$	Duration of Loan					
	10 years	12 years	14 years	16 years	18 years	20 years
100 000	1 186.50	1 054.69	962.58	895.25	844.38	804.98
110 000	1 305.15	1 160.15	1 058.84	984.78	928.82	885.48
120 000	1 423.80	1 265.62	1 155.10	1 074.30	1 013.25	965.98
130 000	1 542.44	1 371.09	1 251.36	1 163.83	1 097.69	1 046.48
140 000	1 661.09	1 476.56	1 347.62	1 253.35	1 182.13	1 126.97
150 000	1 779.74	1 582.03	1 443.88	1 342.88	1 266.57	1 207.47
160 000	1 898.39	1 687.50	1 540.13	1 432.40	1 351.01	1 287.97

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### H.S.C. Question (12)

The table shows present value interest factors for some monthly interest rates ( $r$ ) and loan terms in months ( $N$ ).

$r$	0.0060	0.0065	0.0070	0.0075	0.0080	0.0085
$N$						
45	39.33406	38.90738	38.48712	38.07318	37.66545	37.26383
46	40.09350	39.64965	39.21263	38.78231	38.35859	37.94133
47	40.84841	40.38714	39.93310	39.48617	39.04622	38.61311
48	41.59882	41.11986	40.64856	40.18478	39.72839	39.27924
49	42.34475	41.84785	41.35905	40.87820	40.40515	39.93975
50	43.08623	42.57113	42.06459	41.56645	41.07653	40.59470

Mark borrows \$10 000 for a car. He arranges to repay the loan with monthly repayments over 4 years. He is charged 7.2% per annum interest.

Using the table, calculate the amount of interest Mark will pay over the term of this loan.

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 <b>Activity</b> see next page
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### Monthly Repayments for \$1000

Interest rate (% p.a.)	Term of loan (months)				
	12	24	36	48	60
8	86.99	45.23	31.34	24.41	20.28
9	87.45	45.68	31.80	24.89	20.76
10	87.92	46.14	32.27	25.36	21.25
11	88.38	46.61	32.74	25.85	21.74
12	88.85	47.07	33.21	26.33	22.24
13	89.32	47.54	33.69	26.83	22.75
14	89.79	48.01	34.18	27.33	23.27

- 2** Calculate the monthly repayments on these car loans:
- a** \$25 000 at 11% p.a. reducible over 4 years
  - b** \$13 600 at 9% p.a. reducible over 3 years
  - c** \$38 900 at 14% p.a. reducible over 5 years
- 3** For the following loans, calculate:
- i** the monthly repayment
  - ii** the total amount of interest paid.
- a** \$18 200 at 10% p.a. over 4 years
  - b** \$8700 at 8% p.a. over 2 years
  - c** \$34 800 at 12% p.a. over 5 years
- 4** Heidi wants to buy a motor bike. She is offered a loan of \$14 100 at 9% p.a. over either 3 or 4 years. How much would she save if she chose the shorter term?
- 5 a** Jack needs to borrow \$19 600 to buy a car and can pay a maximum of \$450 per month. He is offered a loan at 12% p.a. Can he afford the loan? Give details.
- b** Could he afford the loan if the interest rate was 14%? What advice would you give Jack?
- 6 a** Jo's monthly repayment on a loan at 13% p.a. over 3 years is \$808.56. How much did Jo borrow?
- b** Ben's monthly repayment on a loan at 10% p.a. over 4 years is \$798.84. How much did Ben borrow?

- 2 a** \$646.25      **b** \$432.48      **c** \$905.20
- 3 a i** \$461.55      **ii** \$3954.40
- b i** \$393.50      **ii** \$744
- c i** \$773.95      **ii** \$11 637
- 4** \$703.88

- 5 a** At 12% p.a. over  
 12 months, monthly repayment = \$1741.46  
 24 months, monthly repayment = \$922.57  
 36 months, monthly repayment = \$650.92  
 48 months, monthly repayment = \$516.07  
 60 months, monthly repayment = \$435.90  
 He can afford the loan if he takes it over 5 years.
- b** No
- 6 a** \$24 000      **b** \$31 500

- **Compare the Cost of Purchase of Different Motor Vehicles (Cars and Motorcycles only), including Finance, Transfer of Registration and Insurance**

When purchasing a vehicle, there is a range of ‘hidden costs’ beyond purchasing the vehicle that need to be considered. A list has been provided below.

- Dealer Delivery Charges – a fee charged by the company you are buying the vehicle from to get the car delivered to the dealer.
- Transfer of Registration – a fee charged by the RTA when you buy a used car and want to transfer the registration from the previous owner’s name to your name.
- Stamp Duty – see page 5.
- Compulsory Third Party Insurance (CTP Green Slip) – see page 3.
- Non-Compulsory Insurance – see page 3.

 **Example 13**

Fred and Wilma buy a new family car priced at \$50 000. In addition to the purchase price, there are the following costs.

• Dealer delivery charges	\$1995
• Compulsory third-party insurance	\$748
• Registration	\$323
• Comprehensive car insurance	\$920
• Stamp duty, calculated at 3% of the car value up to and including \$45 000 plus 5% of the car value over \$45 000	

Calculate the total amount that Fred and Wilma will need to pay.

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	<b>Activity</b>	Ex 8.04 ALL
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