

# Mental Math

E-1

## Grade 12 Essential Mathematics (40S)

### Unit E: Vehicle Finance

### Specific Learning Outcome: 12.E5.V.1

General Questions	Answers
1. A computer costs \$500. What is the cost including PST (8%) and GST (5%)?	\$565
2. The price of a \$10,000 snowmobile is reduced by 20%. What is the reduced price of the snowmobile (not including taxes)?	\$8000
3. Solve for $x$ : $\frac{200}{500} = \frac{x}{1000}$	400
4. Solve for $c$ : $\frac{8}{c} = 4$	2
5. What is $\frac{400}{2000}$ as a percent?	20%
Unit Questions	
6. Navjot is a college student. Her gross monthly income is \$2000. She has rent at \$300 a month. She wants to buy a car with payments of \$100 a month. Calculate the ratio of her monthly debt to her monthly income.	20%
7. Iliam is a successful businessperson. He grosses \$10,000 a month. He pays \$2200 a month for his rent and \$800 a month for his Mercedes Benz. He wants to purchase a second vehicle for \$800 a month. Calculate the ratio of his monthly debt to his monthly income.	38%
8. Baloo wants to buy a new laptop computer. His gross monthly income is \$4000. He has a car loan with monthly payments of \$1000 and credit card payments of \$400 per month. How much can Baloo spend each month on a laptop to reach a maximum ratio of monthly debt to monthly income of 40% (which is \$1600)?	\$200
Other Questions	
9.	
10.	

# Mental Math

E-2

## Grade 12 Essential Mathematics (40S)

### Unit E: Vehicle Finance

### Specific Learning Outcome: 12.E5.V.1

#### General Questions

1. Savanna was born in 1995. How old will she be in 2031?
2. Jackie wants to purchase a DVD for \$20, a sweater for \$60, a jacket for \$120, a pair of jeans for \$45, and hair products for \$25. If the bank machine only gives out money in multiples of \$20, how much money does Jackie need to withdraw from the bank machine to cover the costs of her purchases?
3. Burgandy needs to fundraise \$2000 for her school trip. If she earns a profit of \$4 from each box of chocolates she sells, how many boxes of chocolates does she need to sell to earn \$2000?
4. Evaluate:  $\frac{2}{3} + \frac{2}{6}$
5. Your credit card has a balance of \$250. The minimum payment will be \$10 or 10% of your balance—whichever is greater. How much is your minimum payment?

#### Answers

36

\$280

500

1

\$25

#### Unit Questions

6. A General Motors van has a base price of \$26,000. Optional equipment on the van includes a CD player for \$220, cruise control for \$500, and leather seats for \$1280. There is an excise tax of \$100 and a destination charge of \$800. Calculate the manufacturer's suggested retail price for the van.
7. Rohaan buys a Bentley car. She makes payments of \$800 a month for 5 years. She made a down payment of \$12,000. How much did she pay for the car?
8. Timon buys a Hyundai van. He makes payments of \$650 a month for 5 years. How much did he pay for the car?

\$28,900

\$60,000

\$39,000

#### Other Questions

9.

10.

# Mental Math

E-3

## Grade 12 Essential Mathematics (40S)

Unit E: Vehicle Finance

Specific Learning Outcome: 12.E5.V.1

General Questions	Answers
1. If Dave drives at a steady speed of 50 km/h, how long will it take him to drive 10 km?	12 minutes
2. Janice is four times as old as Enrique. If the sum of their ages is 30, how old is Enrique?	6 years old
3. Evaluate: $50 \times 12$	600
4. There are seven green and six blue balls in a box. If one ball is randomly selected, what is the probability that it is blue?	$\frac{6}{13}$
5. If $\frac{6000}{50} = 120$ , determine the value of $\frac{6000}{120}$ .	50
Unit Questions	
6. Lahiq leases an Audi car. He makes payments of \$600 a month for 60 months and a down payment of \$3000. How much is his total lease?	\$39,000
7. Wafaa leases a car for \$36,000 over 72 months. How much does she pay each month? Hint: $\frac{\$36,000}{36 \text{ months}} = \$1000$ a month	\$500
8. Max is debating whether to pay \$42,000 cash for a Dodge truck or make lease payments of \$500 monthly for 5 years plus \$18,000 to purchase at the end of the lease. Calculate the difference between the two options.	\$6000
Other Questions	
9.	
10.	

# Mental Math

E-4

## Grade 12 Essential Mathematics (40S)

### Unit E: Vehicle Finance

### Specific Learning Outcome: 12.E5.V.1

#### General Questions

1. Janique is paid \$5 each time she cuts a log. How much will she be paid if she cuts a log into quarters?
2. When Michelle first woke up, the temperature was  $-5^{\circ}\text{C}$ . By the time Michelle got home from school, the temperature was  $18^{\circ}\text{C}$ . How much did the temperature rise during that day?
3. Samir buys a shirt for \$30. How much is the shirt, including 8% PST and 5% GST?
4. What is 11% of \$12,000?
5. If 6% of \$1000 is \$60, what is 6% of \$1100?

#### Answers

\$15

$23^{\circ}\text{C}$

\$33.90

\$1320

\$66

#### Unit Questions

6. Ralph buys a new 4-door sedan for \$40,000. Calculate the total PST and GST.
7. Luna buys a used truck for \$9250. The book value of the truck is \$11,000. How much PST does she pay? (8% PST)
8. Barinder buys a used van for \$8000. He pays \$640 in PST, \$20 for a lien search, and \$42 for a safety inspection (including taxes). How much does he pay for the van?

\$5200

\$880

\$8702

#### Other Questions

9.

10.

# Mental Math

E-5

## Grade 12 Essential Mathematics (40S)

### Unit E: Vehicle Finance

### Specific Learning Outcome: 12.E5.V.1

General Questions	Answers
1. Tanner is trying to calculate the maximum Total Debt Service Ratio, which is 40% of his income. Tanner's gross income is \$50,000 a year. What is 40% of his income?	\$20,000
2. Calculate the price, including 8% PST and 5% GST, of a vehicle on sale for \$22,000.	\$24,860
3. Calculate the price, including tax (GST 5% and PST 8%), of a vehicle on sale for \$30,000.	\$33,900
4. What is 20% of \$30,000?	\$6000
5. Complete the pattern: 8, 4, 2, 1, $\frac{1}{2}$ , $\frac{1}{4}$ , —, —	$\frac{1}{8}$ , $\frac{1}{16}$
Unit Questions	
6. A \$40,000 truck depreciates 20% the first year. Calculate the total depreciation in the first year.	\$8000
7. A \$30,000 car depreciates 10% the first year and then 10% more in the second year. Calculate the depreciation in the second year.	\$2700
8. Carlos drove 50 km and he used 4.5 litres of gasoline. What is the fuel consumption rate of his vehicle in L/100 km?	9.0 L/100 km
Other Questions	
9.	
10.	

# Mental Math

E-6

## Grade 12 Essential Mathematics (40S)

### Unit E: Vehicle Finance

### Specific Learning Outcome: 12.E5.V.1

#### General Questions

1. Charlise sees a vehicle priced at \$27,500. If Charlise has a down payment of \$5250, what is the size of her loan?
2. Shantelle is buying meat for a family reunion. She bought  $8\frac{3}{4}$  pounds of hamburger, 20.25 pounds of chicken, and 9.5 pounds of steak. How many pounds of meat did Shantelle buy?
3. On a math test, 22 students earned an A. This number is 20% of the total number of students in the class. How many students are in the class?
4. Evaluate:  $3 \times 5 + 6 - \frac{8}{2}$
5. What is 11% of 3500?

#### Answers

\$22,250

38.5

110 students

17

385

#### Unit Questions

6. Neo has a merit discount of 11%. All-purpose vehicle insurance for Neo's sedan is \$1500 before the discount. Calculate the amount of Neo's merit discount.
7. Krystian has a merit discount of 10%. All-purpose vehicle insurance for his van is \$2000 before the discount. How much will the insurance be after the discount?
8. Milan has a pleasure insurance rate of \$800. She has a 12% merit discount. How much will the insurance be after the discount?

\$165

\$1800

\$704

#### Other Questions

9.

10.