

Mental Math

A-1

Grade 11 Essential Mathematics (30S)

Unit A: Interest and Credit

Specific Learning Outcome: 11.E3.I.1

General Questions	Answers
1. You go out for lunch with three friends. The bill comes to \$21.00. If you divide the cost evenly, how much does each person pay?	\$5.25
2. Evaluate: $\frac{3}{4} + \frac{1}{8}$	$\frac{7}{8}$
3. What words are represented by the B and S in the acronym BEDMAS?	B = Brackets () S = Subtract (-)
4. Using BEDMAS, evaluate $2(3 + 4) - 5$.	9
5. Using BEDMAS, evaluate $3^2 + 4 \div 2$.	11
Unit Questions	
6. What is $\frac{2}{100}$ as a decimal?	0.02
7. This week, Ahmed is working Monday, Wednesday, and Friday and he has soccer practice on Tuesday and Sunday. On which days does Ahmed have nothing scheduled?	Thursday and Saturday
8. You have \$100 and you want to buy a shirt that costs \$29.99 and pants that cost \$59.99 before tax. Use rounding to figure out about how much it will cost to buy both items with 12% tax.	About \$100 or exactly \$100.78; you do not have enough money.
Other Questions	
9.	
10.	

Mental Math

A-2

Grade 11 Essential Mathematics (30S)

Unit A: Interest and Credit

Specific Learning Outcomes: 11.E3.I.1/I.3

General Questions

1. Evaluate for $y = 4$: $4y + (-6)$
2. A right triangle has sides with lengths of 12, 20, and 16. What is the length of the hypotenuse?
3. How many times do you have to reflect an image over a line so that you get the original image back?
4. There is a square kite in a picture, drawn to scale. The scale ratio is 1 mm : 20 cm. If the kite has a side length of 3 mm, how large is the life-size kite?
5. Denise earns 15% of her sales at her family restaurant. If she sells \$1400 in food, how much money will she earn?

Answers

10

20

Twice
(or even number)

60 cm

\$210

Unit Questions

6. Find the simple interest if the principal is \$100, the rate is 10%, and the time is 2 years. ($I = Prt$)
7. Find the principal if the simple interest is \$50, the rate is 20%, and the time is 10 years. ($P = \frac{I}{rt}$)
8. Find the interest rate if the simple interest is \$100, the principal is \$1000, and the time is 10 years. ($r = \frac{I}{Pt}$)

\$20

\$25

0.01 = 1%

Other Questions

9.

10.

Mental Math

A-3

Grade 11 Essential Mathematics (30S)

Unit A: Interest and Credit

Specific Learning Outcome: 11.E3.I.1

General Questions	Answers
1. If $12 \times 15 = 180$, what is 13×15 ?	195
2. You are paid \$9.50 per hour. If you work 20 hours this week, how much will you be paid?	\$190
3. The base of a triangle is 4 cm. The height of the same triangle is 5 cm. What is the area of the triangle? $\left(A = \frac{1}{2} \times bh \right)$	10 cm^2
4. Convert the following decimal to a percent: 0.013	1.3%
5. Jordan is twice as old as Carly. Carly is one-third as old as Marc. If Marc is 18, how old is Jordan?	12 years old
Unit Questions	
6. If you invest \$100,000 at a rate of 5%, compounded annually, how much money will you have after 1 year?	\$105,000
7. Mr. Bond is investing in his retirement. He has \$300,000 to invest but he cannot retire until his investment doubles. He finds an investment with a rate of 12%. In how many years can Mr. Bond retire?	6 years
8. What is the difference between simple interest and compound interest?	Compound interest pays interest on the interest made in previous periods. (Interest paid on interest.)
Other Questions	
9.	
10.	

Mental Math

Grade 11 Essential Mathematics (30S)

A-4

Unit A: Interest and Credit

Specific Learning Outcome: 11.E3.I.1

General Questions

1. Evaluate for $x = 5$: $3x - 8$
2. If 13×14 is 182, what is 13×15 ?
3. You are planting a garden in your backyard with the dimensions 1.5 m by 3 m. What is the area of your garden?
4. Saloni goes to a restaurant and orders a \$5 sandwich, a \$2 drink, and a \$2 bag of chips. The cashier offers her the special, which includes a sandwich, drink, and chips for \$8.50. How much cheaper is the special?
5. Convert the following to a decimal: 38%

Answers

7

195

$A = 4.5 \text{ m}^2$

\$0.50

0.38

Unit Questions

6. Without making any calculations, figure out which investment will make more money. Why?

Option A
4.25%
Investment for 3 years.
Compounded annually.

or

Option B
4.25%
Investment for 3 years.
Compounded monthly.

7. If you want to invest money but you cannot afford to lose much money, should you invest in a low-risk investment or a high-risk investment?
8. What is the main risk of putting money in a high-risk investment?

Option B because the interest is compounded more often.

Low-risk investment

You could lose money very quickly.

Other Questions

9.

10.

Mental Math

Grade 11 Essential Mathematics (30S)

A-5

Unit A: Interest and Credit

Specific Learning Outcome: 11.E3.I.2

General Questions	Answers
1. Evaluate for $z = 3$: $6z - 9$	9
2. Heather is $\frac{4}{5}$ th the height of Crystal. Ashley is 15 cm taller than Heather. If Crystal is 150 cm tall, how tall is Ashley?	135 cm
3. You are having a day of shopping. At European Clothing you spend \$38.00; at Discount you spend \$10.00; at Micki's you spend \$66.00; and at Alarms you spend \$23.00. How much money did you spend altogether?	\$137.00
4. Solve: $2d - 7 = 29$	$d = 18$
5. Evaluate: $\frac{2}{3} \times \frac{5}{7}$	$\frac{10}{21}$
Unit Questions	
6. John is going to university next year. Which option will save him more money? Explain. a) John pays for school with his credit card at a rate of 18% and invests his savings in a 5-year term at 3%. b) John pays for school with his savings and does not invest money.	Option (b) is better because John would lose money paying 18% interest on his tuition.
7. Kim wants to buy a \$10,000 car. She has three sources of money. Which of the following options is not a good choice and why? a) Savings account (She has \$11,000.00 in her account.) b) Credit card (19%) c) Personal loan (5%)	Option (b) because the card has a very high interest rate
8. Kassem has a \$3,000 line of credit with a 4% interest rate. He has a credit card with a \$10,000 limit and a 19% interest rate. How can he purchase a \$5,000 sofa and spend the least amount of interest?	He should put \$3,000 on the line of credit and \$2,000 on the credit card.
Other Questions	
9.	
10.	

Mental Math

A-6

Grade 11 Essential Mathematics (30S)

Unit A: Interest and Credit

Specific Learning Outcome: 11.E3.I.2

General Questions

1. Evaluate: $\frac{5}{6} + \frac{2}{3}$
2. Sarah walked to school this morning, which is 2 km away from her house. She then walked 500 m to the convenience store after school before going home (1.5 km). How far did Sarah walk in total?
3. What is 10% of 1400?
4. You want to buy a gift for your sister. You get her some makeup, which costs \$25.75 including tax. If you give the cashier \$40, how much change will you get back?
5. Your best friend wants to hang out this week. You work Monday, Tuesday, Thursday, and Saturday. You have soccer on Wednesday and Sunday. Is there any day that you are free?

Answers

$$\frac{9}{6} \text{ or } \frac{3}{2}$$

4 km

140

\$14.25

Friday

Unit Questions

6. Two types of credit are personal line of credit and overdraft protection. What are two other types of credit?
7. In what circumstance is there a benefit for a person to borrow money to invest it?
8. Kassem borrowed \$1000 to invest. The tables show the terms. How much money did he lose/gain altogether?

Personal loans and credit cards

Investment income is greater than the interest paid on borrowed money.

He lost \$90.

Kassem's Investment
$P = \$1000, r = 5\%, t = 3 \text{ years}$
$I = Prt$
$= 1000 \times 0.05 \times 3$
$= \$150$
Kassem made \$150.

Money Kassem Borrowed
$P = \$1000, r = 8\%, t = 3 \text{ years}$
$I = Prt$
$= 1000 \times 0.08 \times 3$
$= \$240$
Kassem lost \$240.

Other Questions

9.

10.

Mental Math

A-7

Grade 11 Essential Mathematics (30S)

Unit A: Interest and Credit

Specific Learning Outcome: 11.E3.I.3

General Questions

- Isabella does not want to walk around a parking lot with dimensions 30 m by 40 m. If she walks from corner to corner (diagonally), how far will she walk?
- Fill in the blanks in the pattern: 1, 2, 4, 8, _____, _____
- Write two equivalent fractions for $\frac{16}{28}$.
- Solve: $c - 4 = 15$
- Jack and Jill climbed up a hill. They covered a distance of 400 m in eight minutes. How fast did they climb?

Answers

50 m

16, 32

Possible answers:

$\frac{4}{7}, \frac{8}{14}, \frac{32}{56}, \frac{12}{21}$

$c = 19$

50 m/min.

Unit Questions

Use the table below to solve questions 6 to 8. **Hint:** This table is for a monthly payment per \$1000.

Amortization Table					
Monthly Payment per \$1000 Loan Proceeds					
Annual Rate	1 Year Monthly	2 Years Monthly	3 Years Monthly	4 Years Monthly	5 Years Monthly
6.00%	\$86.10	\$44.35	\$30.45	\$24.50	\$19.35
6.25%	\$86.20	\$44.45	\$30.55	\$24.60	\$19.45
6.50%	\$86.30	\$44.55	\$30.65	\$24.70	\$19.55
6.75%	\$86.40	\$44.65	\$30.75	\$24.85	\$19.70

- Riley needs a loan of \$1000 for home repairs. His credit union gave him a four-year loan at a fixed interest rate of 6.75%. How much will he pay monthly?
- Talia's car broke down and she needs to pay \$500 in repairs. Her bank gave her a loan at 6.5% for four years. How much will she pay monthly?
- Angelica borrowed \$2000 from her bank. She pays \$60.90 a month for three years. What is the annual rate?

\$24.85

\$12.35

6.00%

Other Questions

9.

10.

Mental Math

Grade 11 Essential Mathematics (30S)

A-8

Unit A: Interest and Credit

Specific Learning Outcome: 11.E3.I.1

General Questions

1. If 25% of a number is 680, what is 50% of the number?
2. The sides of a right-angle triangle are 28, 45, 53. What are the two possible ratios for tangent?
3. List four types of credit.
4. It is your friend's birthday. You collect \$5 from each of your other friends to buy him a hoodie that costs \$40.00, including tax. If you and nine other people pay \$5 for the hoodie, how much will you have left over?
5. Evaluate: $\frac{3 \times 4}{6} + 8$

Answers

1360

$\frac{28}{45}$ and $\frac{45}{28}$

credit card,
personal line of
credit, personal/
consumer loan,
overdraft protection

\$10

10

Unit Questions

6. Jaqueline buys a stove for \$599 and fridge for \$899. She is on a pay-later plan with no interest for a year. If she pays within the year, what is the pay-later price of the fridge and stove?

\$1498 or about
\$1500

For questions 7 and 8, assume the taxes are included in the price.

7. Annie wants to buy a \$100 jacket but she doesn't have enough money. The pay-later price is \$117. What is the percent finance charge?
8. Olaf buys a TV surround system for \$1000. The store charges 12% annual interest, compounded monthly. If Olaf pays for the system in one month, how much does he pay in total?

17%

\$1010

Other Questions

9.

10.

Mental Math

Grade 11 Essential Mathematics (30S)

A-9

Unit A: Interest and Credit

Specific Learning Outcome: 11.E3.I.3

General Questions	Answers
1. Complete the pattern: 100 000, 10 000, 1 000, _____, _____	100, 10
2. Estimate the taxes (at 13%) on a shirt that costs \$15.00.	≈ \$1.50 to \$2.25
3. Germany, England, and Greece are in a group for a soccer tournament. Germany wins against Greece. Greece loses to England. Germany beats England. In what order do they finish? (First, Second, Third)	First = Germany Second = England Third = Greece
4. A watch chimes every hour, on the hour. Between 4:23 a.m. and 7:54 p.m., how many times does it chime?	15
5. Write two equivalent fractions for $\frac{45}{81}$.	Possible answers: $\frac{5}{9}, \frac{15}{27}, \frac{90}{162}, \dots$
Unit Questions	
6. What is the carrying charge for a 45" flat-screen TV that costs \$2500 cash or \$100 a month for 24 months with \$250 down? Assume taxes are included.	\$150
7. Klein broke his cellphone. A new phone costs \$599.99 (\$671.99 after tax). If the carrying charge for the phone is \$67, estimate the percent rate of the carrying charge.	≈ 10%
8. Odessa wants to buy a car and she can afford to pay \$700 a month. Toyota has a deal on the Corolla. Payments are \$600 a month for 60 months at 0% interest. Why should she buy the car now?	She can afford it and a 0% interest deal is the best anyone can get.
Other Questions	
9.	
10.	

Mental Math

Grade 11 Essential Mathematics (30S)

A-10

Unit A: Interest and Credit

Specific Learning Outcome: 11.E3.I.2

General Questions

1. Evaluate: $5 - 3 + 6 \times 2 - 8 \div 4$
2. It is New Year's Eve, and you are excited for midnight. If it is 17:25 right now, how much time is there between now and midnight?
3. It has rained 354 mm in four hours. How much rain is this in cm?
4. There are 195 countries in the world, and 19 of these countries have an ecological footprint larger than 5.0 gha/person. Estimate the percentage of countries that have an ecological footprint larger than 5.0 gha/person.
5. Solve: $3d - 2 = 25$

Answers

12

6 hours,
35 minutes

35.4 cm

Between
9% and 10%

$d = 9$

Unit Questions

6. What are three popular credit cards used in Canada?
7. What is one thing you should look for in a credit card contract to help save you money?
8. You can choose between two credit cards. Which would you choose and why?

Pizza
\$3000 limit
16% interest
compounded monthly

or

Fastercard
\$3000 limit
18% interest
compounded monthly

Visa,
MasterCard,
and AMEX

Low interest
rate and low/no
monthly fee

Pizza has a lower
interest rate

Other Questions

9.

10.

Mental Math

Grade 11 Essential Mathematics (30S)

A-11

Unit A: Interest and Credit

Specific Learning Outcome: 11.E3.I.2

General Questions	Answers
1. Convert the following percent to a decimal: 14.5%	0.145
2. Your dad is in England for a business trip. In England, they are six hours ahead of us in Manitoba. If it is 4:30 p.m. here, what time is it in England?	10:30 p.m.
3. Dario went to the store to buy some new clothes for the next school year. He spends \$16.71 on t-shirts, \$48.13 on pants, and \$24.42 on a sweater. Estimate how much Dario spends in total, to the nearest dollar (not including taxes).	Between \$85 and \$95
4. Evaluate for $x = 8$: $4x - 15$	17
5. The area of your property is 150 m^2 . If the dimensions of your house are 8 m by 10 m, what is the area of your yard, not including the area taken up by your house?	70 m^2
Unit Questions	
6. Kash forgot to pay his credit card balance for 20 days. If the daily interest charge is 0.01%, how much interest does he pay on \$1000?	\$2
7. Li has a credit card with an annual interest rate of 17%. What is the daily interest rate on this card as a fraction?	$\frac{17}{365}$
8. Anabella's credit card balance is \$100. If her minimum monthly payment is 5% of the ending balance or \$10 (whichever is greater), calculate her minimum monthly payment.	\$10
Other Questions	
9.	
10.	

