

Mental Math

Grade 10 Essential Mathematics (20S)

G-1

Unit G: Trigonometry

General Questions	Answers
1. You saved \$104 in one year by putting aside the same amount each week. How much did you save each week?	\$2
2. You know that 30×4 is 120. What is 60×4 ?	240
3. Convert 6 litres to millilitres.	6000 mL
4. Is $\frac{4}{5} + \frac{3}{7}$ greater or less than 1?	greater than
5. You started your math homework at 3:30 p.m. and finished at 4:25 p.m. How many minutes did you spend on your math homework?	55 minutes
Unit Questions	
6. Solve: $\frac{4}{3} = \frac{x}{6}$	8
7. Solve: $\frac{3}{m} = \frac{4}{12}$	9
8. Write the solution to the nearest tenth: $\frac{3}{5} = \frac{2}{x}$	3.3
Other Questions	
9.	
10.	

Mental Math

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G-2

Unit G: Trigonometry

General Questions

1. Is the answer to $-25 + 16$ positive or negative?
2. A shirt is 20% off of its regular price of \$40.00. How much will you pay for it on sale?
3. A 500 g package of chocolate chips is \$6.00. How much do the chocolate chips cost per gram?
4. You work 4.5 hour shifts 4 times per week. You are paid \$10 per hour. How much do you make per week?
5. Calculate: $78 + 12$

Answers

negative

\$32.00

1.2¢

\$180

90

Unit Questions

Given similar triangles as shown:



6. If $AB = 6$, $BC = 4$, and $DE = 9$, what is the measure of EF ?
7. If $\angle A = 40^\circ$ and $\angle F = 74^\circ$, what is the measure of $\angle E$?
8. If $\frac{DE}{AB} = 2$, what is the value of $\frac{DF}{AC}$?

6

66°

2

Other Questions

9.

10.

Mental Math

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G-3

Unit G: Trigonometry

General Questions	Answers
1. Two angles in a triangle are 30° and 65° . What is the third angle?	85°
2. Calculate: $\frac{5}{3} \times \frac{4}{5}$	$\frac{4}{3}$ or $1\frac{1}{3}$
3. How many 3-digit numbers can you write with the digits 1, 2, and 3, using each digit only once?	6
4. To pay for your movie ticket, you give the cashier \$15. The cost of the ticket is \$13.25. The cashier gives you back a loonie, a quarter, and 5 dimes. Is this the correct change?	Yes
5. Is $\frac{8}{5}$ closer to 1 or 2?	2
Unit Questions	
6. What is the measure of the hypotenuse of a right triangle if the measures of the other two sides are 5 cm and 12 cm?	13 cm
7. The hypotenuse of a right triangle is 10 units; its smaller side is 6 units. What is the measure of the third side?	8 units
8. If $a = 7$ and $b = 4$, estimate the value of $\sqrt{a^2 + b^2}$ to the whole number.	≈ 8
Other Questions	
9.	
10.	

Mental Math

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G-4

Unit G: Trigonometry

General Questions

1. The angle between the two equal sides of an isosceles triangle is 80° . What are the values of the other two angles?
2. You can buy a 400 g package of chocolate eggs for \$8.00, or you can pay \$0.10 per gram. Which is the better buy?
3. 1 out of every 25 vehicles that you see on your way home from the cabin is a truck. Express this as a ratio.
4. Is the answer to $-14 - 29$ positive or negative?
5. Solve for a : $3a = \frac{9}{2}$

Answers

50°

package of eggs

1:25

negative

$\frac{3}{2}$ or $1\frac{1}{2}$

Unit Questions

6. A right triangle has an angle measuring 62° . What are the measures of the other two angles?
7. Two of the angles of a right triangle are 36° and 54° . What is the measure of the angle opposite the hypotenuse?
8. The sides of a right triangle are 8, 15, and 17. What sides are adjacent to the right angle?

90° and 28°

90°

8 and 15

Other Questions

9.

10.

Mental Math

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G-5

Unit G: Trigonometry

General Questions	Answers
1. The side length of a square is 5 cm. What is the area of the square?	25 cm ²
2. Knowing that there are 60 minutes in one hour, how many degrees does the minute hand of a clock move in 5 minutes?	30°
3. Convert to a decimal: 0.25%.	0.0025
4. Evaluate: $\frac{3}{4} \times \frac{5}{7}$	$\frac{15}{28}$
5. Janelle works Monday to Friday and is paid \$80 per day. How much money does she make in two weeks?	\$800
Unit Questions	
6. True or False: $\sin \theta = \frac{\text{opposite}}{\text{hypotenuse}}$	True
7. True or False: $\cos \theta = \frac{\text{opposite}}{\text{adjacent}}$	False
8. True or False: $\tan \theta = \frac{\text{adjacent}}{\text{hypotenuse}}$	False
Other Questions	
9.	
10.	

Mental Math

Grade 10 Essential Mathematics (20S)

G-6

Unit G: Trigonometry

General Questions

1. A CFL end zone is 60 feet deep. The field is 65 yards wide. What is the area of the end zone in square yards?
2. Is the answer to $-16 + (-15)$ positive or negative?
3. You are buying a DVD player for \$100. If the in-store warranty is 6.5% of the cost, how much will you pay for the warranty?
4. Write two equivalent fractions to $\frac{15}{9}$.
5. The scale diagram of an object is 1 cm: 50 cm. If the drawing is 10 cm long, what is the real length of the object?

Answers

1300 sq. yd.

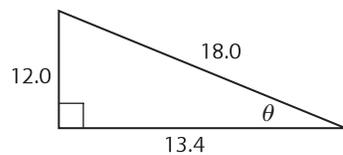
negative

\$6.50

$\frac{5}{3}$ and $\frac{10}{6}$

500 cm or 5 m

Unit Questions



6. What is the value of $\sin \theta$? (Don't simplify the fraction.)
7. What is the value of $\cos \theta$? (Don't simplify the fraction.)
8. What is the value of $\tan \theta$? (Don't simplify the fraction.)

$\frac{12.0}{18.0}$

$\frac{13.4}{18.0}$

$\frac{12.0}{13.4}$

Other Questions

9.

10.

Mental Math

Grade 10 Essential Mathematics (20S)

G-7

Unit G: Trigonometry

General Questions

1. If two of the angles in a triangle are 45° and 105° , what is the third angle?
2. What is the value for $3x - 3$ if $x = 4$?
3. Is the answer to $-5 - (-12)$ positive or negative?
4. It is really hot outside so you are very thirsty. In your fridge, there is orange juice with pulp, apple juice, water, and milk. You are lactose-intolerant. You do not like water, nor do you like pulp. What will you drink?
5. Convert 34 km into cm.

Answers

30°

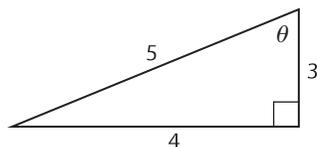
9

positive

apple juice

3 400 000 cm

Unit Questions



6. What is the value of $\cos \theta$? (Don't simplify the fraction.)
7. What is the value of $\sin \theta$? (Don't simplify the fraction.)
8. What is the value of $\tan \theta$? (Don't simplify the fraction.)

$\frac{3}{5}$

$\frac{4}{5}$

$\frac{4}{3}$

Other Questions

9.

10.

Mental Math

Grade 10 Essential Mathematics (20S)

G-8

Unit G: Trigonometry

General Questions

1. You have several nickels and dimes. What is the smallest number of coins that you can use to make a sum of 45 cents?
2. Evaluate: $\frac{5}{6} - \frac{1}{3}$
3. The three sides of a right angle triangle are 6.5, 9.7, 7.2. Which is the hypotenuse?
4. Evaluate: $10 - 14$
5. You are supposed to work from 9 a.m. to 5 p.m. You arrive at work at 8:55 a.m., and leave at 4:50 p.m. How much time does your employer pay you for?

Answers

5

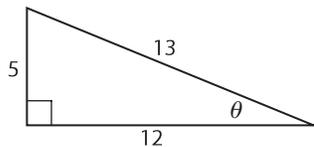
$\frac{1}{2}$

9.7

-4

$7\frac{3}{4}$ hours

Unit Questions



6. What is the value of $\tan \theta$? (Don't simplify the fraction.)
7. What is the value of $\cos \theta$? (Don't simplify the fraction.)
8. What is the value of $\sin \theta$? (Don't simplify the fraction.)

$\frac{5}{12}$

$\frac{12}{13}$

$\frac{5}{13}$

Other Questions

9.

10.

Mental Math

Grade 10 Essential Mathematics (20S)

G-9

Unit G: Trigonometry

General Questions

1. Each time you get paid, you save 30% of your paycheque. This week your paycheque was \$400. How much will you save?
2. Solve for j : $\frac{5}{8} = \frac{j}{12}$
3. When Brendan was born, his brother was 6. Brendan is now 15. How old is his brother?
4. The area taken up by a building is 3200 m^2 . If the building is 40 m wide, how long is it?
5. The exchange rate from Canadian dollars to Thai baht is 1 : 37. If you have \$1000 for your trip to Thailand, how many baht will you have?

Answers

\$120

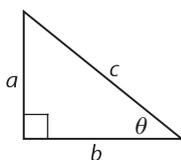
7.5

21

80 m

37 000

Unit Questions



6. True or False: $\tan \theta = \frac{b}{a}$
7. What can you say about the measures of the sides of the triangle if you know $\tan \theta = 1$?
8. What can you say about the measures of the sides of the triangle if you know $\tan \theta > 1$?

False

$a = b$

$a > b$

Other Questions

9.

10.

