

Mental Math

Grade 10 Essential Mathematics (20S)

D-1

Unit D: Geometry

General Questions	Answers
1. Rewrite the following fraction in lowest terms: $\frac{24}{52}$	$\frac{6}{13}$
2. You have measured your foot to be 9.5". Is your foot a good referent to approximate a foot in length?	No
3. You are paid a salary of \$960 every two weeks. If you work a total of 96 hours in that time, what is your hourly wage?	\$10
4. Solve for p : $p \div 5 = 15$	75
5. You are available to meet from 9:00 a.m. to 3:00 p.m., Antoine can meet from 12:00 noon to 2:00 p.m., and Liane is available from 10:00 a.m. to 1:00 p.m. During what time frame can you and your friends meet?	12:00 noon to 1:00 p.m.
Unit Questions	
6. The floor of a classroom measures 25 feet by 22 feet. What is the area of the floor of this classroom?	550 ft. ²
7. Estimate the area of the floor of a room measuring 19.7 m by 32.3 m.	$\approx 640 \text{ m}^2$
8. Determine the area of a deck that measures 8' by $4\frac{1}{2}$ '.	36 ft. ²
Other Questions	
9.	
10.	

Mental Math

Grade 10 Essential Mathematics (20S)

D-2

Unit D: Geometry

General Questions

1. Estimate the product of 0.524 and 3.57.
2. The last time you counted, you had 54 DVDs. Your house was broken into last night and now you only have 32. How many DVDs were stolen?
3. Complete the pattern: $-1, 2, -3, \underline{\quad}, \underline{\quad}$
4. A 90° angle is called a _____ angle.
5. What is a logical unit to use when measuring the dimensions of your room?

Answers

≈ 1.8

22

4, -5

right

metres or feet

Unit Questions

6. Multiply $\frac{5}{2} \times \frac{4}{3}$ (simplify your answer).
7. Change the improper fraction, $\frac{151}{12}$, to a mixed number.
8. Estimate the product: $4\frac{1}{2} \times 5\frac{3}{4}$

$\frac{10}{3}$

$12\frac{7}{12}$

$\approx 4\frac{1}{2} \times 6 = 27$

Other Questions

9.

10.

Mental Math

Grade 10 Essential Mathematics (20S)

D-3

Unit D: Geometry

General Questions	Answers
1. In the morning, you need 30 minutes to eat, 35 minutes to get ready, and 15 minutes to travel to work. What time, at the latest, must you get up to make it to work on time at 8:00 a.m.?	6:40 a.m.
2. Solve for b : $8 + b - 4 = 16$	12
3. Which is larger: 0.66 or $\frac{2}{3}$?	$\frac{2}{3}$
4. If you are looking for a good deal, you found it—bread is 50% off! One loaf usually costs \$2.40. How much will you pay with the discount?	\$1.20
5. There is half a pie on the counter. If you eat a quarter of that pie, how much will you have eaten out of the whole pie?	$\frac{1}{8}$
Unit Questions	
6. What is the area of a rectangle measuring 15 ft. by 26 ft.?	390 ft. ²
7. Find the area of a triangle with a base of 25 cm and a height of 16 cm.	200 cm ²
8. What is the width of a rectangular carpet if its area is 2700 cm ² and its length is 90 cm?	30 cm
Other Questions	
9.	
10.	

Mental Math

Grade 10 Essential Mathematics (20S)

D-4

Unit D: Geometry

General Questions

1. In Home Economics, the teacher asks your group to make a double recipe of lasagna for the class, while other groups are making different parts of the meal. The recipe for lasagna calls for $\frac{3}{4}$ cup of Parmesan cheese. How much Parmesan cheese will you need if you are making a double recipe?
2. John's office is 5 tiles long and 5 tiles wide. If each tile measures 2 feet by 2 feet, what is the area of John's office?
3. To get to Gimli it takes 1.25 hours. If you are travelling at 100 km/h the whole time, how far is Gimli?
4. At a baseball game, you bought popcorn for \$3.00 and a drink for \$2.50. If the ticket cost \$12.50, what total amount did you spend at the game?
5. Put the following numbers in order from smallest to largest: 0.53, 29%, 0.045, 0.13, 78%.

Answers

$1\frac{1}{2}$ cups

100 ft.²

125 km

\$18.00

0.045, 0.13,
29%, 0.53, 78%

Unit Questions

6. To the nearest centimetre, what is the area of a circle with a radius of 10 cm?
7. A trapezoid has a height of 10 cm and a base of 22 cm. The side parallel to the base is 18 cm. What is the area of the trapezoid?
8. A circle has an area of 1200 m². Approximating π to 3, estimate the value of the radius.

314 cm²

200 cm²

≈ 20 m

Other Questions

9.

10.

Mental Math

Grade 10 Essential Mathematics (20S)

D-5

Unit D: Geometry

General Questions	Answers
1. The mat used for floor gymnastics is a square. The length along one side is 40 feet. What is the total area of the mat?	1600 feet ²
2. A student receives a grade of $\frac{18}{21}$ on his test. Estimate the percent value.	$\approx 90\%$
3. Rewrite the following fraction in lowest terms: $\frac{12}{20}$	$\frac{3}{5}$
4. A restaurant offers you a 10% discount on a meal regularly priced at \$16. How much money will you receive back if you pay with a \$20 bill?	\$5.60
5. Your gross pay is \$530. You receive a bonus of \$60 and your deductions of CPP and EI are \$26 and \$10, respectively. What is your net pay?	\$554.00
Unit Questions	
6. You are making a map using a scale of 1 cm : 100 km. What distance represents 550 km on your map?	5.5 cm
7. Your garden has a perimeter of 32 m. What would be the perimeter on the drawing of your garden if the scale used is 1 cm : 8 m?	4 cm
8. On a drawing, a house measures 10 cm high using a scale of 2 : 250. What is the actual height of the house (in metres)?	12.5
Other Questions	
9.	
10.	

Mental Math

Grade 10 Essential Mathematics (20S)

D-6

Unit D: Geometry

General Questions

1. Solve for q : $\frac{13}{q} = \frac{1}{3}$

2. Write the ratio as a fraction: 1 : 17

3. You are buying a hot chocolate. The total is \$1.78, but all you have is a \$20 bill. How much change will you get back?

4. What numbers and types of bills and coins would you expect to get back if you bought the hot chocolate in Question 3?

5. Diane works 42 hours at an hourly rate of \$11 per hour. If she gets paid at double-time after 40 hours, what is her gross salary?

Answers

39

$\frac{1}{17}$

\$18.22

2 pennies,
2 dimes, a loonie,
a toonie, a \$5 bill,
a \$10 bill

\$484.00

Unit Questions

6. A diagram is drawn on a scale of 1 in. : 50 km. How long is 250 km on the drawing?

5 in.

7. A garden has a perimeter of 81 feet. What would be the perimeter of the garden on a drawing if the scale is 1 in. : 3 ft.?

27 in.

8. Using a scale of 2 in. : 50 yd. on a diagram, a path measures 20 inches long. What is the actual length of the path?

500 yd.

Other Questions

9.

10.

Mental Math

Grade 10 Essential Mathematics (20S)

D-7

Unit D: Geometry

General Questions	Answers
1. A 2-door sports car gets 12.2 km per L of gas. A truck gets 7100 m per L of gas. Which is more fuel efficient?	sports car
2. 35% of the trees in the forest of 400 have Dutch elm disease. How many trees have this illness?	140
3. Find the average: 2, 4, 6	4
4. A clown needs two balloons to make a flower. If he makes a bouquet of a dozen flowers, how many balloons will he need?	24
5. It is 1:35 p.m. You have been waiting for your friend for 50 minutes. What time did you expect to meet?	12:45 p.m.
Unit Questions	
6. A rug is in the shape of a rectangle measuring 2 feet by 5 feet. What is the area of the rug in square inches?	1440 in. ²
7. Marie's bedroom measures 8 m by 12 m. What is the area of her room in cm ² ?	9600 cm ²
8. There are 3 feet in 1 yard. How many square yards are equal to 1800 ft. ² ?	200 yd. ²
Other Questions	
9.	
10.	

Mental Math

Grade 10 Essential Mathematics (20S)

D-8

Unit D: Geometry

General Questions

1. Jared lost 55% of his weight when he went on his submarine sandwich diet. He originally weighed 420 pounds. How much does he weigh now?
2. Your suitcase cannot exceed 26 kg when you are going on an international flight. Your cousin weighs around 25 kg. Would he be a good referent?
3. At the gas station, the price posted is \$1.20 per L. Your fuel tank holds 40 L. How much is it going to cost to fill up your car?
4. In a restaurant, typically there is half the number of clients on Monday than there was on Saturday. If there are 590 clients on Monday, how many clients were there on Saturday?
5. Evaluate: $\frac{2}{7} + \frac{6}{14}$

Answers

189 lbs.

Yes

\$48.00

1180

$\frac{5}{7}$

Unit Questions

6. One hectare is equal to about 2.5 acres. How many hectares are equal to 12.5 acres?
7. There are about 4000 m² in one acre. How many square metres are there in 3.5 acres?
8. There are about 2.5 km² in one square mile and one square mile is equivalent to 640 acres. Estimate the number of acres in 10 km².

5

14 000

2560

Other Questions

9.

10.

Mental Math

Grade 10 Essential Mathematics (20S)

D-9

Unit D: Geometry

General Questions	Answers
1. Solve for z : $3 \times 7 = z - 4$	25
2. Complete the pattern: $-1, 0, 1, 0, \underline{\quad}, \underline{\quad}, 1$	$-1, 0$
3. Amy has twice as many shirts as dresses and 3 times as many dresses as pants. If she has 24 shirts, how many pants does she have?	4
4. The radius of a globe is 5 cm. The ratio comparing the size of the globe to the earth is 1 cm : 800 miles. What is the approximate radius of the earth?	4000 miles
5. What is your gross pay if you work for 28 hours at \$15 per hour?	\$420
Unit Questions	
6. You need 1 cubic yard of concrete to cover an area of 32 square feet with a uniform depth. How many cubic yards does it take to cover an area of 160 square feet with the same uniform depth?	5 yd.^3
7. If there is about 3 feet for each of your steps and your rectangular garden measures 15 steps by 20 steps, what is the area of your garden in square feet?	2700 ft.^2
8. A piece of carpet costing \$2.50 per square foot measures 12 feet by 25 feet. What is the cost of this piece of carpet?	\$750
Other Questions	
9.	
10.	

