

Mental Math

B-1

Grade 12 Essential Mathematics (40S)

Unit B: Geometry and Trigonometry

Specific Learning Outcome: 12.E6.G.2

General Questions

1. If the area of a circle equals $16\pi \text{ m}^2$, what does the radius of the circle equal?
2. $\angle A$ and $\angle B$ are complementary angles. If $\angle A = 62^\circ$, what is the measure of $\angle B$?
3. If the perimeter of a square is 20 m, what is the area of the square?
4. Evaluate for $g = -4$: $5g - 13$
5. $\angle C$ and $\angle D$ are supplementary angles. If $\angle C = 62^\circ$, what is the measure of $\angle D$?

Answers

4

$\angle B = 28^\circ$

25 m^2

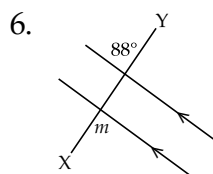
-33

$\angle D = 118^\circ$

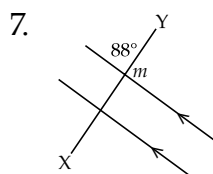
Unit Questions

For questions 6 to 8, find the missing angle, m , and state the name for the known and unknown pair of angles. Angle pair names include:

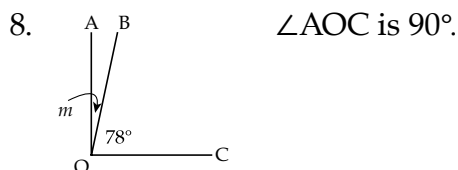
- complementary angles
- supplementary angles
- corresponding angles
- vertically opposite angles
- interior alternate angles
- exterior alternate angles



$m = 88^\circ$
exterior
alternate angles



$m = 92^\circ$
supplementary
angles



$m = 12^\circ$
complementary
angles

Other Questions

9.

10.

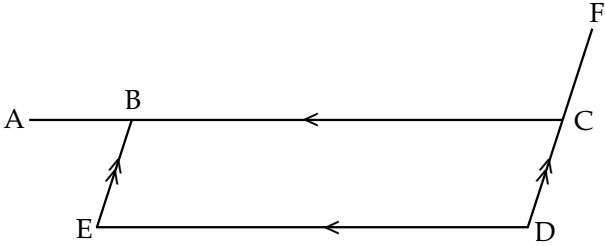
Mental Math

B-3

Grade 12 Essential Mathematics (40S)

Unit B: Geometry and Trigonometry

Specific Learning Outcome: 12.E6.G.2

General Questions	Answers
1. $\angle A$ and $\angle B$ are vertically opposite angles. If $\angle A = 124^\circ$, what is the measurement of $\angle B$?	$\angle B = 124^\circ$
2. $\angle A$ and $\angle B$ are alternate interior angles. If $\angle A = 172^\circ$, what is the measurement of $\angle B$?	$\angle B = 172^\circ$
3. Sam's age is 125% of Jacob's age. If Jacob is 20, what is Sam's age?	25 years old
4. The perimeter of a rectangle with sides a , b , c , and d is 40 m. If sides a and c are 16 m long, what are the lengths of sides b and d ?	4 m
5. What is the radius of a circle with an area of $36\pi \text{ m}^2$?	6 m
Unit Questions	
Use the parallelogram below to answer questions 6 to 8.	
	
6. \overline{AB} is 2 cm. \overline{ED} is 3.5 cm. What is the measurement of \overline{AC} ?	$\overline{AC} = 5.5 \text{ cm}$
7. $\angle ABE$ is 72° . What other angles measure 72° ?	$\angle BED$ $\angle BCD$
8. $\angle ABE$ is 72° . What is the measurement of $\angle EBC$?	$\angle EBC = 108^\circ$
Other Questions	
9.	
10.	

Mental Math

B-4

Grade 12 Essential Mathematics (40S)

Unit B: Geometry and Trigonometry

Specific Learning Outcome: 12.E6.G.1

General Questions

1. $\angle A$ and $\angle B$ are consecutive angles in a parallelogram. If $\angle B = 37^\circ$, what is the measurement of $\angle A$?
2. $\angle A$ and $\angle B$ are both base angles in an isosceles trapezoid. If $\angle A = 57^\circ$, what is the measurement of $\angle B$?
3. A Manitoba yoga centre distributes 42 yoga mats for each yoga session. After 6 yoga sessions, how many mats have they distributed?
4. How many sides does a hexagon have?
5. If $12 \times 16 = 192$, what is 14×16 ?

Answers

$$\angle A = 143^\circ$$

$$\angle B = 57^\circ$$

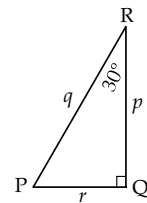
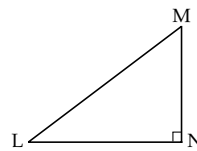
252

6 sides

224

Unit Questions

6. A regular decagon has 10 equal angles with the sum of all angles being 1440° . What is the measurement of each angle?
7. If $\angle MLN$ is 37° , what is the measurement of $\angle LMN$?
8. The hypotenuse of right triangle PQR is 80 cm. $\angle R = 30^\circ$ and $\sin 30^\circ = \frac{1}{2}$. Solve for r .



144°

$$\angle LMN = 53^\circ$$

$$r = 40 \text{ cm}$$

Other Questions

- 9.
- 10.

Mental Math

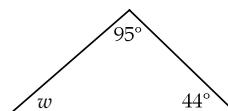
B-5

Grade 12 Essential Mathematics (40S)

Unit B: Geometry and Trigonometry

Specific Learning Outcome: 12.E6.G.1

General Questions	Answers
1. $\angle A$, $\angle B$, and $\angle C$ are all angles in an isosceles triangle. If $\angle A = 40^\circ$ and $\angle B$ and $\angle C$ are base angles in the triangle, what is the measurement of $\angle C$?	$\angle C = 70^\circ$
2. Which polygon has all equal sides and all interior angles equal to 90° ?	Square
3. $\angle A$ and $\angle C$ are opposite interior angles in a parallelogram. If $\angle A = 38^\circ$, what is the measurement of $\angle C$?	$\angle C = 38^\circ$
4. Evaluate: 20% of 315	63
5. You currently have \$623 in your chequing account. You then spend \$123 from your chequing account on clothes. You then deposit a cheque worth \$142 into your chequing account. What is the final balance of your chequing account?	\$642
Unit Questions	
6. What is the value of the missing angle, w ?	$w = 41^\circ$
7. Solve for θ : $\frac{4}{\sin 45^\circ} = \frac{4}{\sin \theta}$	$\theta = 45^\circ$
8. Solve for b using the following information: $\sin 90^\circ = 1$, $\sin 30^\circ = 0.5$ $\frac{b}{\sin 30^\circ} = \frac{20}{\sin 90^\circ}$	$b = 10$
Other Questions	
9.	
10.	



Mental Math

B-6

Grade 12 Essential Mathematics (40S)

Unit B: Geometry and Trigonometry

Specific Learning Outcome: 12.E6.G.1

General Questions

1. $\angle A$, $\angle B$, and $\angle C$ are all angles in an equilateral triangle. What are the measurements of $\angle A$, $\angle B$, and $\angle C$?
2. A right-angled triangle has side lengths of 7.3 cm, 12.0 cm, and 9.5 cm. Which side length is the measurement of the hypotenuse?
3. The ratio of the area of two squares is 100:64. What is the ratio of the side lengths in lowest terms?
4. Calculate the amount of tax on a \$550 item with 12% tax.
5. Juanita invests \$2500 for 1 year. The investment has an interest rate of 5%. How much will her investment be worth after one year?

Answers

60°

12.0 cm

5:4

\$66

\$2625

Unit Questions

6. What is missing in the order of operations?
Brackets, _____, Division, and Multiplication, followed by Addition and Subtraction
7. Solve for x : $x^2 = 3^2 + 5^2 - 9$
8. Solve for a : $a^2 = 2^2 + 6^2 - 24$

Exponents

5

4

Other Questions

9.

10.