MATHS

BOOKS - PRINCETON MATHS (ENGLISH)

ADDITIONAL TOPICS

Example

1. $cx - 5y = 6$

$2x - 3y = 8$

In the system of equations above, c is a constant and x and y are variables. For what values of c will the system have no solutions?

A. $-\frac{10}{3}$

B. $\frac{-13}{11}$

C. $\frac{13}{11}$

D. $\frac{10}{3}$

Answer: D

Watch Video Solution

2. $g(x) = (x - 5)(x + 3)$

Which of the following is an equivalent form of the function g above in which the minimum value of g appears as a constant or coefficient ?

A. $g(x) = x^2 - 15$

B. $g(x) = x^2 - 2x - 15$

C. $g(x) = (x - 1)^2 - 16$

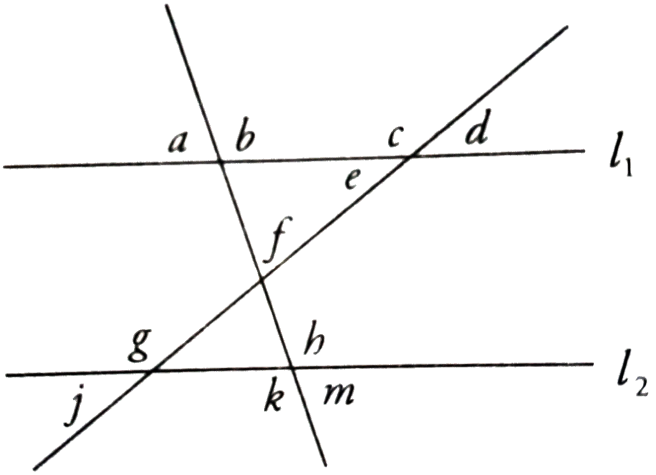
D. $g(x) = (x + 1)^2 - 12$

Answer: C

Watch Video Solution

Quick Quiz 1

1.



In the figure above, I_1 is parallel to l_2. Which of the following angles are NOT equal?

A. c and g

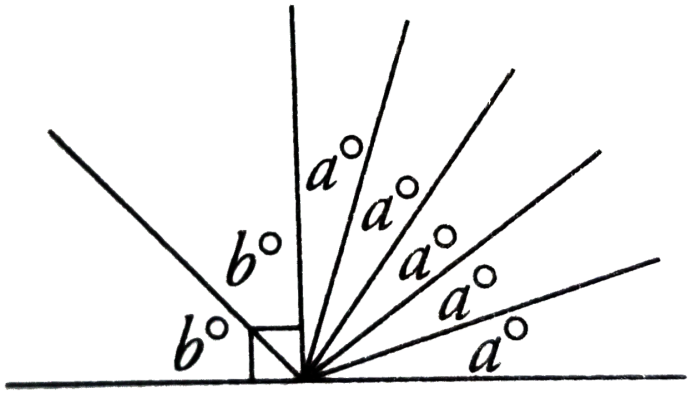
B. b and h

C. a and m

D. a and k

Answer: D

 Watch Video Solution



2.

In the figure above, what is the value of 4a-b?

A. 18°

B. 27°

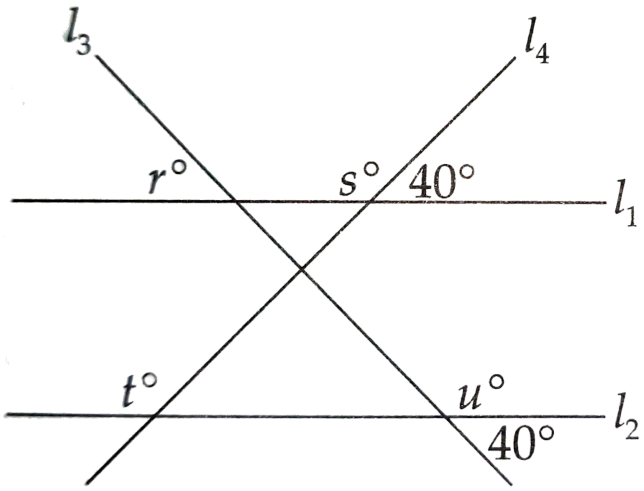
C. 45°

D. 54°

Answer: B

Watch Video Solution

3.



Note: Figure not drawn to scale.

Which of the following must be true?

A. $l_1 \parallel l_2$

B. l_3 bisects l_4

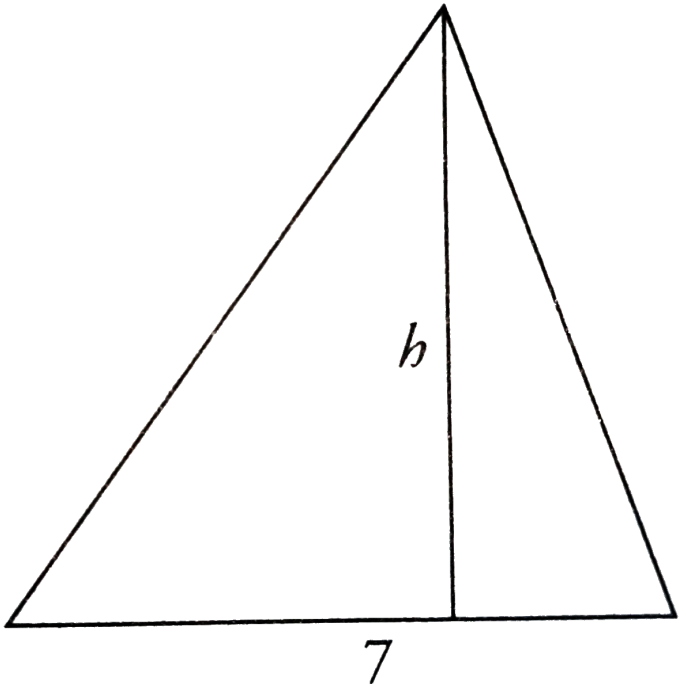
C. $s = t$

D. $u = 140^\circ$

Answer: D

Watch Video Solution

Quick Quiz 2



1.

In the triangle above, h is perpendicular to the base and the area equals 21. What is the value of h?

A. 3

B. 4

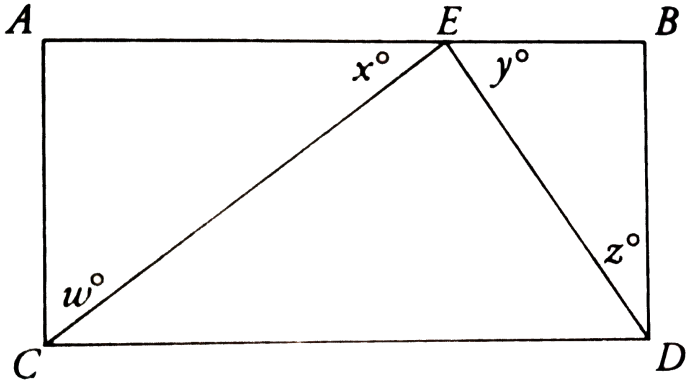
C. 6

D. 7

Answer: C

 Watch Video Solution

2.



In ABCD is a triangle, what is the value of $w + x + y + z$?

A. 90

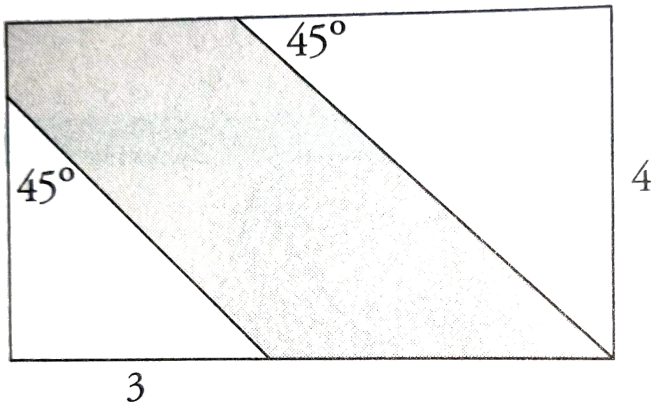
B. 150

C. 180

D. 210

Answer: C

Watch Video Solution



Note: Figure not drawn to scale.

3.

If the rectangle above has an area of 32, and the unshaded triangles are isosceles, what is the perimeter of the shaded area?

A. 16

B. $10 + 7\sqrt{2}$

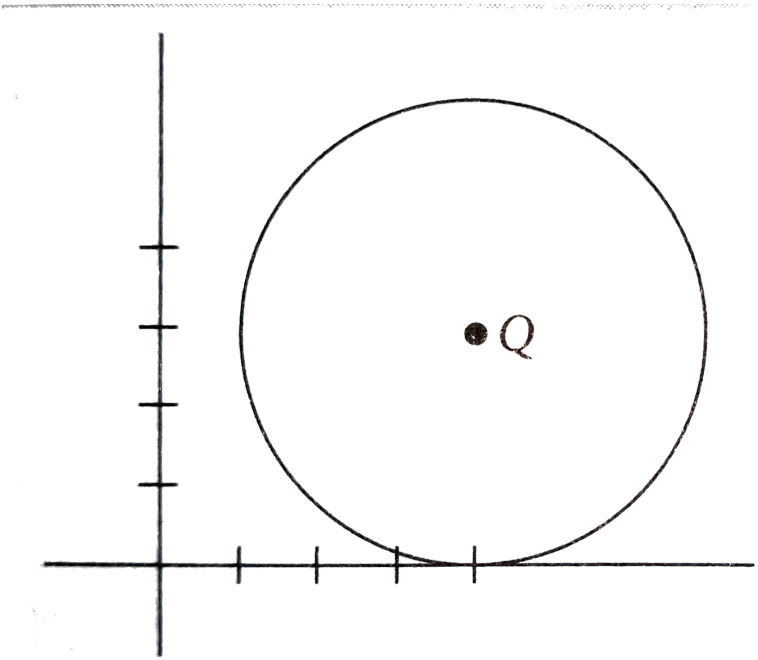
C. $10 + 12\sqrt{2}$

D. 32

Answer: B

Watch Video Solution

Quick Quiz 3



1.

Center Q of the circle above has coordinate of $(4, 3)$. What is the circumference of the circle?

A. π

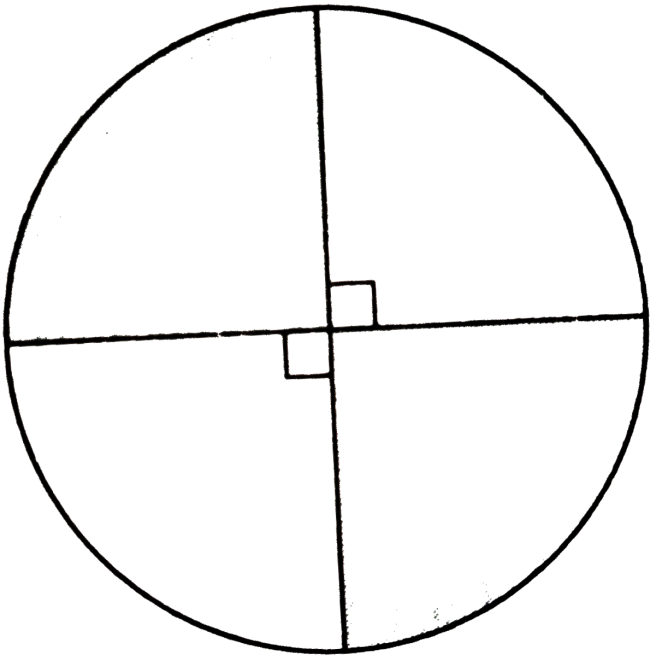
B. 2π

C. 6π

D. 9π

Answer: C

 Watch Video Solution



2.

If the circumference of the circle above is 16π, what is the total area of the shaded regions?

A. 64π

B. 32π

C. 12π

D. 8π

Answer: B

Watch Video Solution

3. One circle has a radius of r, and another circle has a radius of 2r. The area of the larger circle is how many times the area of the smaller circle?

A. 1.5

B. 2

C. 3

D. 4

Answer: D

Watch Video Solution

4. In the xy-plane, a circle with center O passes through the point (2, 0) and has a radius of 4.

Which of the following could be the equation of circle O?

A. $(x-2)^2+(y+4)^2=4$

B. $(x-2)^2+(y+4)^2=16$

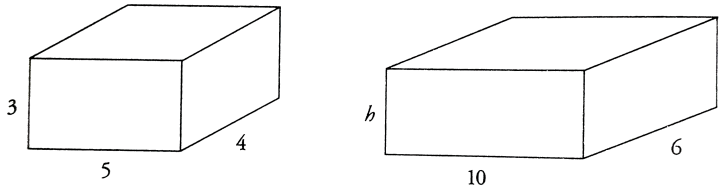
C. $(x-4)^2+(y+2)^2=16$

D. $(x+2)^2+(y-2)^2=16$

Answer: B

Watch Video Solution

Quick Quiz 4



Note: Figures not drawn to scale.

1. If the volumes of the two boxes above are equal, what is the value of h?

A. 1

B. 2

C. 4

D. 5

Answer: A

Watch Video Solution

2. Sam in packing toy blocks into a crate. If each block is a cube with a side of 6 inches, and the crate is 1 foot high, 2 feet long, and 2 feet wide, what many blocks can sam fit into the crate?

A. 6

B. 12

C. 24

D. 32

Answer: D

Watch Video Solution

3. The surface area of a rectangular solid measuring $5 \times 6 \times 8$ is how much greater than the surface area of a rectangular solid measuring $3 \times 6 \times 8$?

A. 12

B. 24

C. 48

D. 56

Answer: D

Watch Video Solution

Quick Quiz 5

1. In triangle ABC, angle C measures 90°. If $\cos B = \frac{12}{13}$, what is the value of sinB?

A. $\frac{5}{12}$

B. $\frac{5}{13}$

C. $\frac{12}{13}$

D. $\frac{13}{12}$

Answer: B

Watch Video Solution

2. A 25 foot ladder is placed against the side of a building at an angle of 70° from the ground.

How far away is the base of the ladder from the building?

A. $25\cos 70^\circ$

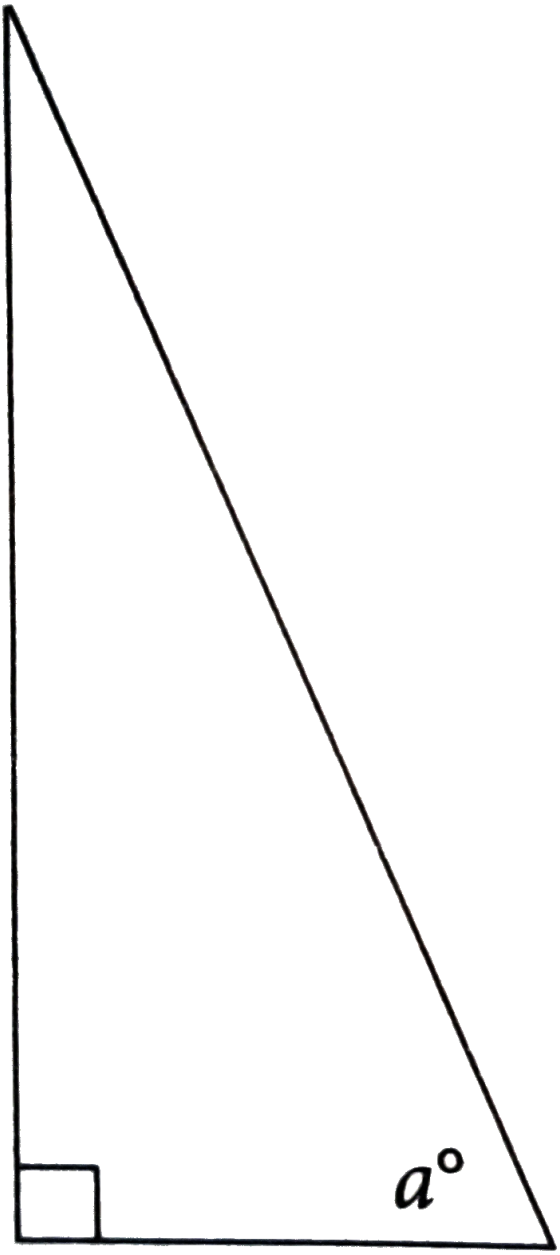
B. $8.5\sin 70^\circ$

C. $25\tan 70^\circ$

D. $8.5\cos 70^\circ$

Answer: A

Watch Video Solution



3.

In the figure above, what is the value of $\cos a^\circ$ if $\cos(90^\circ - a^\circ) = \frac{3}{5}$?

A. $\frac{3}{5}$

B. $\frac{3}{4}$

C. $\frac{4}{5}$

D. $\frac{5}{4}$

Answer: C

Watch Video Solution

Quick Quiz 6

1. What is the measure in degrees of an angle that is $\frac{\pi}{4}$ radians?

A. 4°

B. 25°

C. 45°

D. 90°

Answer: C

Watch Video Solution

2. Point X and Y lie on a circle with center C such that the measure of the minor are formed by central angle XCY is $\frac{3}{10}$ of the circumference of the circle. What is the measure of angle XYC, in radians?

A. $\frac{3}{10}\pi$

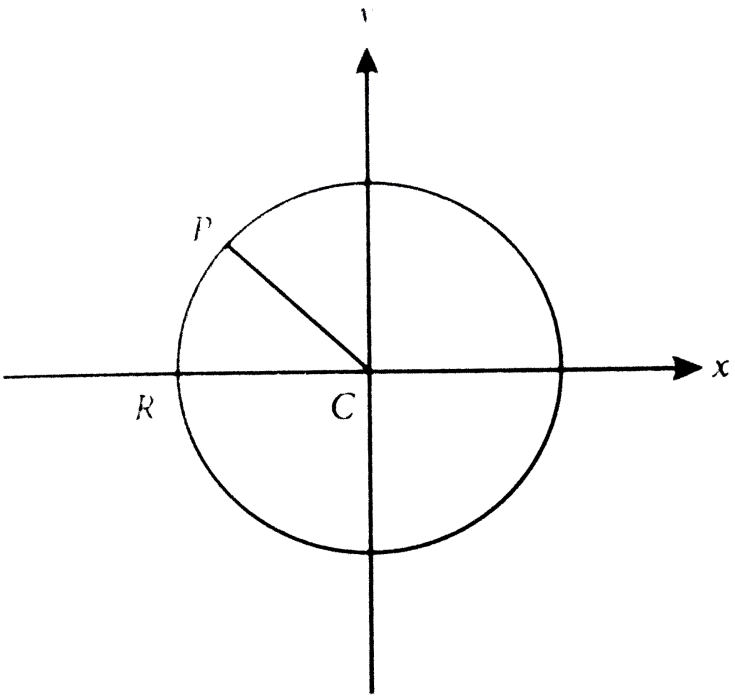
B. $\frac{3}{5}\pi$

C. $\frac{6}{5}\pi$

D. $\frac{5}{3}\pi$

Answer: B

Watch Video Solution



3.

In the xy-plane above, the circle with center C contains the point P with coordinates $\left(-\sqrt{2}, \sqrt{2}\right)$. If angle PCR has a measure of $\frac{\pi}{x}$ radians, what ist he value of x?

Watch Video Solution

Quick Quiz 7

1. $\left(4i^2 - 6i\right) - (3 + 10i)$

For $i = \sqrt{-1}$, which of the following complex numbers is equal to the expressions above?

A. $-7 - 16i$

B. $-1 + 4i$

C. $1 - 4i$

D. $7 + 16i$

Answer: A

Watch Video Solution

2. $\dfrac{7 + 3i}{4 - 6i}$

In the complex number system, which of the following is equivalent to the expression above?

A. $\dfrac{5}{26} - \dfrac{27i}{26}$

B. $\frac{5}{26} + \frac{27i}{26}$

C. $\frac{7}{4} - \frac{3i}{6}$

D. $\frac{7}{4} + \frac{3i}{6}$

Answer: B

Watch Video Solution

3. Which of the following is equivalent to the expression $\left(\frac{6+3i}{2} - \frac{7+4i}{3}\right)^2$?

A. $\frac{13+7i}{6}$

B. $\frac{14+8i}{6}$

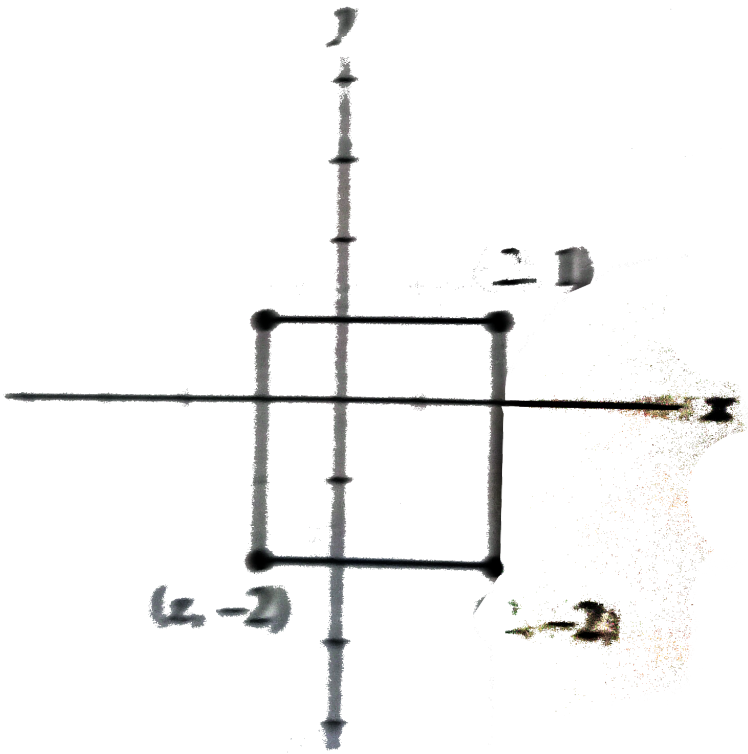
C. $\frac{4-i}{36}$

D. $\frac{15+8i}{36}$

Answer: D

Watch Video Solution

Quick Quiz 8



1.

If the figure above is a square, what is the value of a?

A. -2

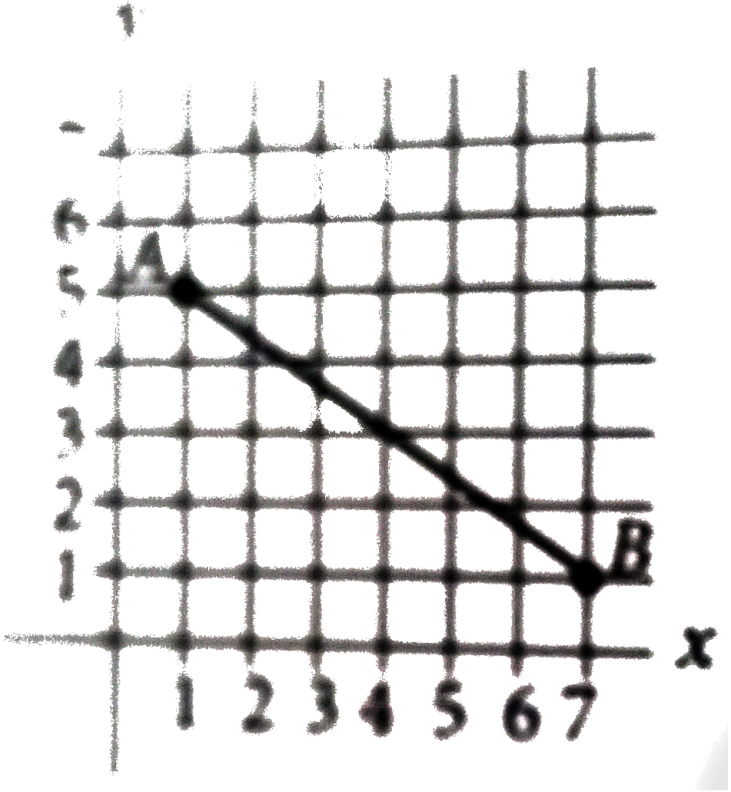
B. -1

C. 1

D. 2

Answer: B

 Watch Video Solution



2.

In figure above , what is the length of AB?

A. 4

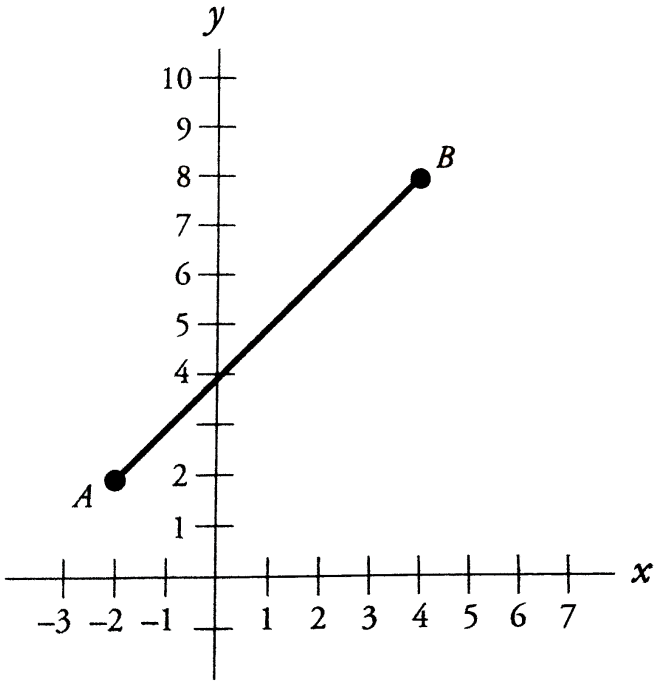
B. $2\sqrt{6}$

C. 7

D. $\sqrt{52}$

Answer: D

 Watch Video Solution



3.

In the figure above, the coordinates for point A are (-2, 2) and the coordinates for point B are (4, 8). If line CD, not shown, in parallel to the line AB, what is the slope of line CD?

A. -1

B. 0

C. 1

D. 2

Answer: C

Watch Video Solution

Quick Quiz 9

1.

t	-1	0	1	2
$g(t)$	0	-2	0	6

The table above provides values for the function g for selected values of t. Which of the following defines the function g?

A. $g(t) = t^2 - 2$

B. $g(t) = t^2 + 2$

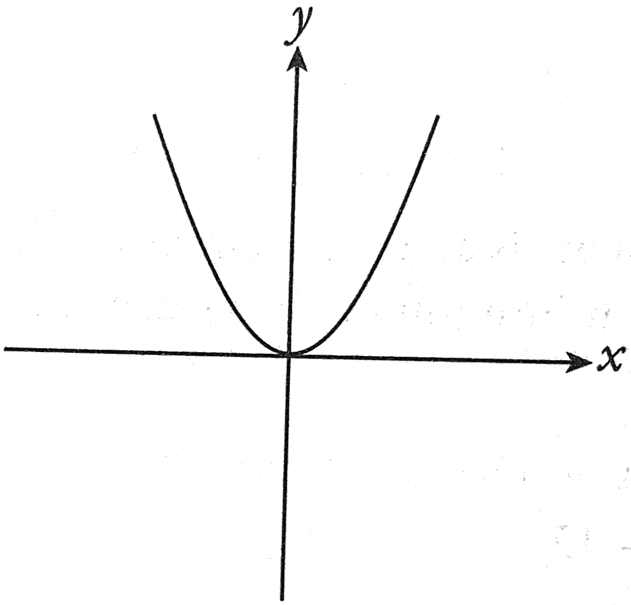
C. $g(t) = 2t^2 - 2$

D. $g(t) = 2t^2 + 2$

Answer: C

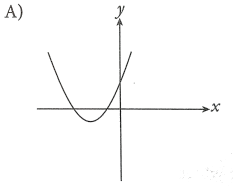
Watch Video Solution

2.

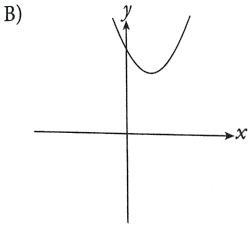


The quadratic $y = f(x)$ is shown above. Which of the following graphs represents the function $y = f(x + 3) - 4$?

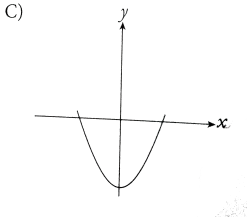
A.



B.



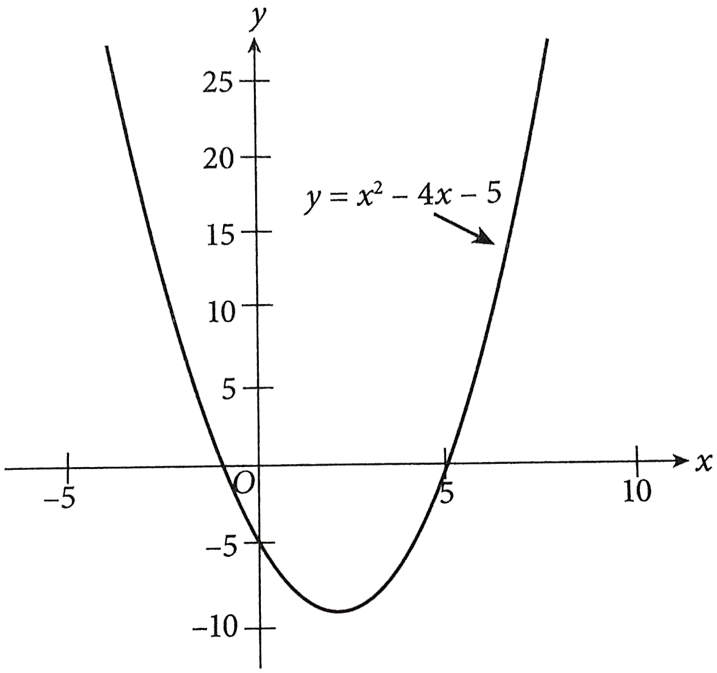
C.



D.

Answer: A

Watch Video Solution



3.

Which of the following is an equivalent form of the equation of the graph shown in the xy plane above, from which the coordinates of vertex Z can be identified as constant in the equation?

A. $x(x-4)-5$

B. $(x-2)^2-9$

C. $(x+5)(x-1)$

D. $(x-5)(x+1)$

Answer: B

Watch Video Solution