



Up-to-date Questions and Answers from authentic resources to improve knowledge and pass the exam at very first attempt. ----- Guaranteed.



ACT-Math MCQs
 ACT-Math TestPrep
 ACT-Math Study Guide
 ACT-Math Practice Test
 ACT-Math Exam Questions



killexams.com

ACT

ACT-Math

ACT Section Two: Math

ORDER FULL VERSION



<https://killexams.com/pass4sure/exam-detail/ACT-Math>

Question: 263

$$\frac{ab}{c} = d$$

and a and c are doubled, what happens to the value of d?

- A. The value of d remains the same.
- B. The value of d is doubled.
- C. The value of d is four times greater.
- D. The value of d is halved.
- E. The value of d is four times smaller.

Answer: A

Explanation:

If a and c are doubled, the fraction on the left side of the equation becomes

$$\frac{2ab}{2c}$$

The fraction has been multiplied by $\frac{2}{2}$ which is equal to 1. Multiplying a fraction by 1 does not change its value:

$$\frac{2ab}{2c} = \frac{ab}{c} = d$$

The value of d remains the same.

Question: 264

COST OF BALLONS	
QUANTITY	PRICE PER BALLOON
1	\$1.00
10	\$0.90
100	\$0.75
1,000	\$0.60

Balloons are sold according to the chart above. If a customer buys one balloon at a time, the cost is \$1.00 per balloon. If a customer buys ten balloons at a time, the cost is \$0.90 per balloon. If Carlos wants to buy 2,000 balloons, how much money does he save by buying 1,000 balloons at a time rather than ten balloons at a time?

- A. \$200
- B. \$300
- C. \$500
- D. \$600
- E. \$800

Answer: D

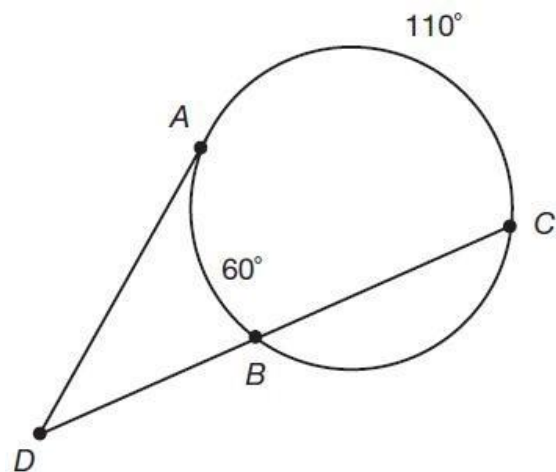
Explanation:

If Carlos buys ten balloons, he will pay $10 \times \$0.90 = \9 . In order to total 2,000 balloons, Carlos will have to make this purchase $2,000 \div 10 = 200$ times. It will cost him a total of $200 \times \$9 = \$1,800$. If Carlos buys 1,000 balloons, he will pay $1,000 \times \$0.60 = \600 . In order to total 2,000 balloons, Carlos will have to make this purchase $2,000 \div 1,000 = 2$ times. It will cost him a total of $2 \times \$600 = \$1,200$. It will save Carlos $\$1,800 - \$1,200 = \$600$ to buy the balloons 1,000 at a time.

Question: 265

Given the following figure with one tangent and one secant drawn to the circle, what is the measure of $\angle ADB$?

?

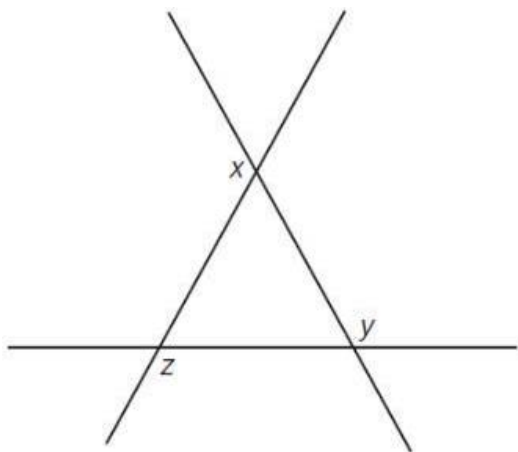


- A. 50
- B. 85
- C. 60
- D. 110
- E. 25

Answer: E
Explanation:
 The measure of an angle in the exterior of a circle formed by a tangent and a secant is equal to half the difference of the intercepted arcs. The two intercepted arcs are

\overline{AB} which is 60° , and \overline{AC} which is 110° . Find half of the difference of the two arcs: $1/2 \times (110 - 60) = 1/2 \times 50 = 25^\circ$.

Question: 266



In the diagram above, what is the sum of the measures of the $\angle x$, $\angle y$ and $\angle z$?

- A. 180°
- B. 360
- C. 540°
- D. 720°
- E. Cannot be determined.

Answer: B
Explanation:

There are 180° in a line: $(x + (\text{supplement of } \angle x$

$) + (y + (\text{supplement of } \angle y$

$) + (z + (\text{supplement of } \angle z$

$) = 540$. The supplement of $\angle x$

, the supplement of $\angle y$

, and the supplement of $\angle z$

are the interior angles of a triangle. There are 180° in a triangle, so those supplements sum to 180. Therefore, $x + y + z + 180 = 540$, and $x + y + z = 360$.

Question: 267

If the surface area of a cube is 384 cm^2 , what is the volume of the cube?

- A. 64 cm^3
- B. 256 cm^3
- C. 512 cm^3
- D. 1152 cm^3
- E. 4096 cm^3

Answer: C

Explanation:

The surface area of a cube is equal to $6 \times e^2$, where e is the length of one edge of the cube; $6 \times e^2 = 384 \text{ cm}^2$, $e^2 = 64$, $e = 8 \text{ cm}$. The volume of a cube is equal to e^3 ; $(8 \text{ cm})^3 = 512 \text{ cm}^3$.

Question: 268

Greg has nine paintings. The Hickory Museum has enough space to display three of them. From how many different sets of three paintings does Greg have to choose?

- A. 27
- B. 56
- C. 84
- D. 168
- E. 504

Answer: C

Explanation:

Be careful not to count the same set of three paintings more than once – order is not important. A nine-choose-three combination is equal to

$$\frac{9 \times 8 \times 7}{3 \times 2 \times 1} = \frac{504}{6} = 84$$

Question: 269

It takes eight people 12 hours to clean an office. How long would it take six people to clean the office?

- A. 9 hours
- B. 15 hours
- C. 16 hours
- D. 18 hours
- E. 24 hours

Answer: C,

Explanation:

There is an inverse relationship between the number of people and the time needed to clean the office. Multiply the number of people by the hours needed to clean the office: $8 \times 12 = 96$. Divide the total number of hours by the new number of people, 6: $96 \div 6 = 16$. It takes six people 16 hours to clean the office.

Question: 270

Lindsay grows only roses and tulips in her garden. The ratio of roses to tulips in her garden is 5:6. If there are 242 total flowers in her garden, how many of them are tulips?

- A. 22
- B. 40
- C. 110
- D. 121

E. 132

Answer: E

Explanation:

The number of roses, $5x$, plus the number of tulips, $6x$, is equal to 242 total flowers: $5x + 6x = 242$, $11x = 242$, $x = 22$. There are $5 \times 22 = 110$ roses and $6 \times 22 = 132$ tulips in Lindsay's garden.

Question: 271

The point (2, 1) is the midpoint of a line with endpoints at (-5, 3) and:

- A. (-3, 4)
- B. (-7, 2)
- C. (7, 1)
- D. (9, -1)
- E. (-10, 3)

Answer: D

Explanation:

The midpoint of a line is equal to the average x -coordinates and the average y -coordinates of the line's endpoints:

$(-5 + x) / 2 = 2$, $-5 + x = 4$, $x = 9$ $(3 + y) / 2 = 1$, $3 + y = 2$, $y = -1$ The other endpoint of this line is at (9, -1).

Question: 272

The expression

$$\frac{(x^2 + 2x - 15)}{(x^2 + 4x - 21)}$$

is equivalent to:

- A. $\frac{5}{7}$
- B. $x + 5$
- C. $(x + 5) / (x + 7)$
- D. $-5 / (2x - 7)$
- E. $(2x - 15) / (4x - 21)$

Answer: C

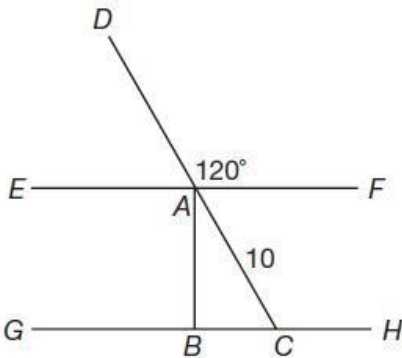
Explanation:

Factor the numerator and denominator and cancel like factors: $(x^2 + 2x - 15) = (x + 5) x (x - 3)$ $(x^2 + 4x - 21) = (x + 7) x (x - 3)$

Cancel the $(x - 3)$ term from the numerator and the denominator. The fraction reduces to $(x + 5) / (x + 7)$.

Question: 273

In the diagram above, lines EF and GH are parallel, and line AB is perpendicular to lines EF and GH. What is the length of line AB?



- A. 5
- B. $5\sqrt{2}$
- C. $5\sqrt{3}$
- D. $10\sqrt{2}$

E. $10\sqrt{3}$

Answer: C

Explanation:

Line AB is perpendicular to line BC , which makes triangle ABC a right triangle. $\angle DAF$

and

$\angle DHC$

are alternating angles, i.e. angles made by a pair of parallel lines cut by a transversal. $\angle DAF \cong \angle DHC$

, therefore,

$\angle DHC = 120^\circ$

$\angle DCH$ and $\angle ACB$

form a line. There are 180° in a line, so the measure of $\angle ACB = 180^\circ - 120^\circ = 60^\circ$

. Triangle ABC is a 30-60-90 right triangle, which means that the length of the hypotenuse, AC , is equal to twice the length of the leg opposite the 30-degree angle, BC . Therefore, the length of BC is $10/2$, or 5. The length of the leg opposite the 60-degree angle, AB , is $\sqrt{3}$ times the length of the other leg, BC . Therefore, the length of AB is $5\sqrt{3}$.

Question: 274

The statement "Raphael runs every Sunday" is always true. Which of the following statements is also true?

- A. If Raphael does not run, then it is not Sunday.
- B. If Raphael runs, then it is Sunday.
- C. If it is not Sunday, then Raphael does not run.
- D. If it is Sunday, then Raphael does not run.
- E. If it is Sunday, it is impossible to determine if Raphael runs.

Answer: A

Explanation:

The statement "Raphael runs every Sunday" is equivalent to "If it is Sunday, Raphael runs." The contra positive of a true statement is also true. The contra positive of "If it is Sunday, Raphael runs" is "If Raphael does not run, it is not Sunday."

Question: 275

Rob has six songs on his portable music player. How many different four-song orderings can Rob create?

- A. 30
- B. 60
- C. 120
- D. 360
- E. 720

Answer: D

Explanation:

The order of the four songs is important. The orderings A, B, C, D and A, C, B, D contain the same four songs, but in different orders. Both orderings must be counted. The number of six-choose-four orderings is equal to $6 \times 5 \times 4 \times 3 = 360$.

Question: 276

A dormitory now houses 30 men and allows 42 square feet of space per man. If five more men are put into this dormitory, how much less space will each man have?

- A. 5 square feet
- B. 6 square feet
- C. 7 square feet
- D. 8 square feet
- E. 9 square feet

Answer: B

Explanation:

$30 \text{ men} \times 42 \text{ square feet} = 1260 \text{ square feet of space}$; $1260 \text{ square feet} \div 35 \text{ men} = 36 \text{ square feet}$; $42 - 36 = 6$, so each man will have 6 less square feet of space.

Question: 277

If 30% of r is equal to 75% of s , what is 50% of s if $r = 30$?

- A. 4.5
- B. 6
- C. 9
- D. 12
- E. 15

Answer: B

Explanation:

If $r = 30$, 30% of $r = 0.30 \times 30 = 9$. 9 is equal to 75% of s . If $0.75s = 9$, then $s = 12$. 50% of $s = 0.50 \times 12 = 6$.

Question: 278

Line $y = \frac{2}{3}x - 5$ is perpendicular to line:

- A. $y = \frac{2}{3}x + 5$
- B. $y = 5 - \frac{2}{3}x$
- C. $y = -\frac{2}{3}x - 5$
- D. $y = \frac{2}{3}x - 5$
- E. $y = -\frac{2}{3}x + 5$

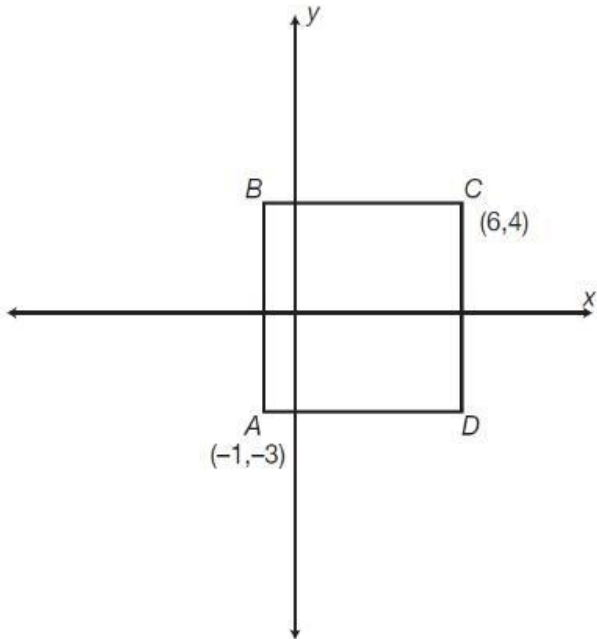
Answer: E

Explanation:

Perpendicular lines have slopes that are negative reciprocals of each other. The slope of the line given is $\frac{2}{3}$. The negative reciprocal of $\frac{2}{3}$ is $-\frac{3}{2}$. Every line with a slope of $-\frac{3}{2}$ is perpendicular to the given line; $y = -\frac{3}{2}x + 5$ is perpendicular to $y = \frac{2}{3}x - 5$.

Question: 279

In the graph above, ABCD is a square. What are the coordinates of point B?



- A. (-1, -4)
- B. (-1, 4)
- C. (-1, 6)
- D. (-3, 1)
- E. (-3, 4)

Answer: B

Explanation:

Point B is the same distance from the y-axis as point A, so the x-coordinate of point B is the same as the x-coordinate of point A (-1). Point B is the

same distance from the x -axis as point C , so the y -coordinate of point B is the same as the y -coordinate of point C (4). The coordinates of point B are $(-1, 4)$.

Question: 280

If the expression

$$\frac{3}{2+x} = \frac{x-5}{2x}$$

, then one possible value of x could be:

- A. -1
- B. -2
- C. -5
- D. 1
- E. 2

Answer: A

Explanation:

Cross multiply and solve for x :

$$3 \times 2x = (2 + x) \times (x - 5) \quad 6x = x^2 - 3x - 10 \quad x^2 - 9x - 10 = 0 \quad (x - 10) \times (x + 1) \quad x = 10, x = -1$$

Killexams.com is a leading online platform specializing in high-quality certification exam preparation. Offering a robust suite of tools, including MCQs, practice tests, and advanced test engines, Killexams.com empowers candidates to excel in their certification exams. Discover the key features that make Killexams.com the go-to choice for exam success.



Exam Questions:

Killexams.com provides exam questions that are experienced in test centers. These questions are updated regularly to ensure they are up-to-date and relevant to the latest exam syllabus. By studying these questions, candidates can familiarize themselves with the content and format of the real exam.

Exam MCQs:

Killexams.com offers exam MCQs in PDF format. These questions contain a comprehensive collection of questions and answers that cover the exam topics. By using these MCQs, candidate can enhance their knowledge and improve their chances of success in the certification exam.

Practice Test:

Killexams.com provides practice test through their desktop test engine and online test engine. These practice tests simulate the real exam environment and help candidates assess their readiness for the actual exam. The practice test cover a wide range of questions and enable candidates to identify their strengths and weaknesses.

Guaranteed Success:

Killexams.com offers a success guarantee with the exam MCQs. Killexams claim that by using this materials, candidates will pass their exams on the first attempt or they will get refund for the purchase price. This guarantee provides assurance and confidence to individuals preparing for certification exam.

Updated Contents:

Killexams.com regularly updates its question bank of MCQs to ensure that they are current and reflect the latest changes in the exam syllabus. This helps candidates stay up-to-date with the exam content and increases their chances of success.