powered by ExamView

What is the rational number equivalent to $3.\overline{67}$?

a. $3\frac{67}{99}$

b. $3\frac{73}{91}$

c. $3\frac{5}{6}$

d. $3\frac{55}{60}$

powered by ExamView

Which of the following is an irrational number?

a. $\frac{-15}{10}$

b. $\sqrt{20}$

c. $\sqrt{9}$

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

powered by ExamView

There are $\left(8^2\right)^2 \bullet 8^2$ bacteria in the petri dish. What is the total number of bacteria are in the petri dish?

a. 8^8

b. 8^7

c. 8^9

d. 8^6

powered by ExamView

What value is equivalent to $\left(\frac{7 \bullet 1 \bullet 2}{7 \bullet 3}\right)^2 \times \left(\frac{5^0}{2^{-2}}\right)^3 \times 2^{-6}$?

a. $\frac{4}{9}$

b. $\frac{28}{3}$

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

d. $\frac{2}{9}$

powered by ExamView

What is the simplified expression for $\frac{9^{-4} \bullet 10^{6} \bullet 9^{7}}{10^{7} \bullet 9^{2}}$?

a. $\frac{10^{6}}{9^{2}}$

b. $\frac{9^{2}}{10}$

c. $\frac{9}{10}$

d. $\frac{9}{10^{6}}$

powered by ExamView

What is the simplified expression for $\frac{5^{7} \bullet 5^{6}}{5^{2}}$?

a. 5^{10}

b. 5^{11}

c. 5^{13}

d. 5^{8}

powered by ExamView

What calculation could be used to find $y^{5} = 243$

a. $y = \frac{243}{5}$

b. $y = \sqrt{243}$

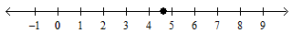
c. $y = \frac{\sqrt{243}}{5}$

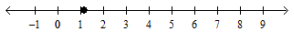
d. $y = \sqrt[5]{243}$

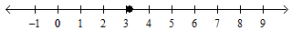
powered by ExamView

Which of the following shows the location $\sqrt{10}$ accurately on a number line?

a. 

b. 

c. 

d. 

powered by ExamView

A closed container has 1.81×10^{20} atoms of a gas. Each atom of the gas weighs 1.12×10^{-21} grams. Which of the following shows and explains the approximate total mass, in grams, of all the atoms of the gas in the container?

a. 0.29 grams, because $(1.81 + 1.12) \bullet \left(10^{20} \bullet 10^{-21}\right) = 2.93 \bullet 10^{-1}$

b. 0.2 grams, because $(1.81 \bullet 1.12) \bullet \left(10^{20} \bullet 10^{-21}\right) = 2.0272 \bullet 10^{-1}$

c. 2.03 grams, because $(1.81 \bullet 1.12) \bullet \left(10^{20} \bullet 10^{-21}\right) = 2.0272$

d. 2.93 grams, because $(1.81 + 1.12) \bullet \left(10^{20} \bullet 10^{-21}\right) = 2.93$

powered by ExamView

Multiply $\left(1.9 \times 10^{15}\right) \bullet \left(2.3 \times 10^{17}\right)$. Express your answer in scientific notation.

a. 4.37×10^{32}

b. 4.37×10^{-32}

c. 4.37×10^{255}

d. 4.37×10^{255}

powered by ExamView

The distance of star Marvin from its Sun is approximately 7.8×10^{11} kilometers, and the distance of star Volky from the same Sun is 1.5×10^{12} kilometers. About how many more kilometers is the distance of Volky from the Sun than the distance of Marvin from the Sun?

a. 7.2×10^{11} kilometers

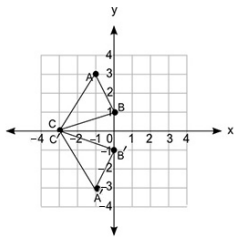
b. 7.2×10^{12} kilometers

c. 6.3×10^{12} kilometers

d. 6.3×10^{11} kilometers

powered by ExamView

Triangle ABC is transformed to triangle A'B'C', as shown below:



Which equation shows the correct relationship between the measures of the angles of the two triangles?

a. $m\angle BCA = m\angle A'B'C'$

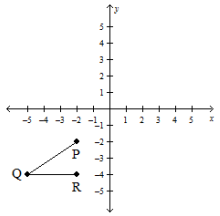
b. $m\angle BCA = m\angle C'A'B'$

c. $m\angle CAB = m\angle C'B'A'$

d. $m\angle CAB = m\angle C'A'B'$

powered by ExamView

Angle PQR is formed by segments PQ and QR on the following coordinate grid:

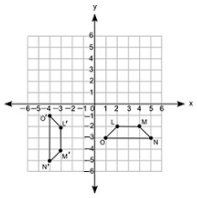


Angle PQR is rotated 90 degrees counterclockwise about the origin to form angle P'Q'R'. Which statement shows the measure of angle P'Q'R'?

a. $m\angle P'Q'R' = 90$ degrees
b. $m\angle P'Q'R' = m\angle PQR$
c. $m\angle P'Q'R' = 2 \bullet m\angle PQR$
d. $m\angle P'Q'R' = 180$ degrees

powered by ExamView

Polygons LMNO and L'M'N'O' are shown on the following coordinate grid:

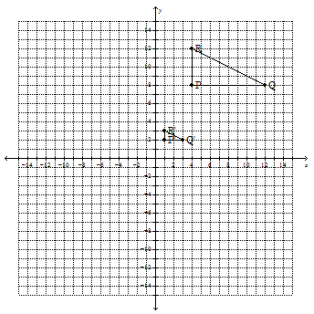


What set of transformations is performed on LMNO to form L'M'N'O'?

a. A translation 1 unit to the left followed by a 270-degree clockwise rotation about the origin
b. A 270-degree clockwise rotation about the origin followed by a translation 1 unit to the right
c. A 90-degree clockwise rotation about the origin followed by a translation 1 unit to the left
d. A translation 1 unit to the right followed by a 90-degree counterclockwise rotation about the origin

powered by ExamView

Triangle PQR is transformed to similar triangle P'Q'R'.

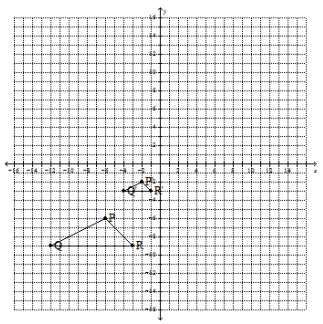


What is the scale factor of dilation?

a. 3
b. $\frac{1}{4}$
c. $\frac{1}{5}$
d. 4

powered by ExamView

Triangle PQR is transformed to similar triangle P'Q'R'.

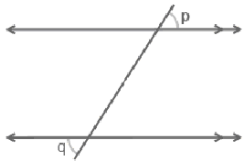


What transformation was performed on PQR to form P'Q'R'?

a. A dilation factor of $\frac{1}{5}$
b. A dilation factor of 3
c. A dilation factor of $\frac{1}{3}$
d. A dilation factor of 2

powered by ExamView

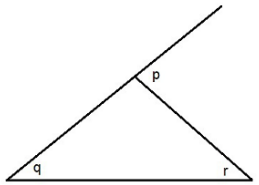
A pair of parallel lines is cut by a transversal, as shown:



Which of the following best represents the relationship of angles p and q?

a. $m\angle q = 180 \text{ degrees} - m\angle p$
b. $m\angle p = 2(m\angle q)$
c. $m\angle p = 180 \text{ degrees} - m\angle q$
d. $m\angle p = m\angle q$

powered by ExamView



Which addition, subtraction or equality statement is always correct for the image above?

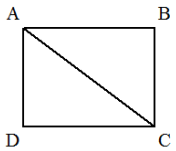
a. r - q = p
b. p = r
c. r = q
d. p - r = q

powered by ExamView

What is the length of the unknown side?

a. 1
b. 7
c. 5
d. 9

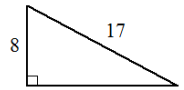
powered by ExamView



The above image is a rectangle. If AC = 20 and AB = 16, what is the value of BC?

a. 13
b. 4
c. 36
d. 12

powered by ExamView

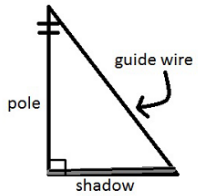


What is the length of the unknown side?

a. 16
b. 15
c. 25
d. 9

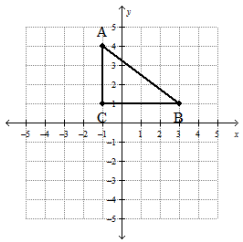
powered by ExamView

The picture below shows a pole, stablized by a guide wire, and the pole's shadow. If the guide wire is 184 inches long, and the shadow is 108 inches long, how tall is the pole in inches, to the nearest tenth?



a. 149 inches
b. 150 inches
c. 150.5 inches
d. 148.5 inches

powered by ExamView



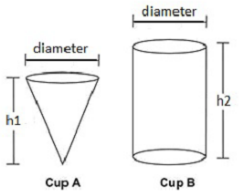
According to the graphed image, what is the length of side AB to the nearest tenth of a unit?

a. 5 units
b. 3.5 units
c. 5.5 units
d. 6 units

powered by ExamView

What is the volume of a sphere with a radius of 12 inches?

a. $2,276\pi$ cubic inches
b. $2,304\pi$ cubic inches
c. $2,322\pi$ cubic inches
d. $2,300\pi$ cubic inches



How many more cubic inches of juice will cup B hold than cup A when both are completely full? The diameters are both 2 inches, h1 = 5 inches, and h2 = 6 inches. Round your answer to the nearest tenth, and use 3.14 for pi.

a. 12.1 cubic inches
b. 14.1 cubic inches
c. 14.6 cubic inches
d. 13.6 cubic inches

Which statement **best** explains whether the table represents a linear or nonlinear function?

Input (x)	Output (y)
−1	2
0	3
1	4
2	5

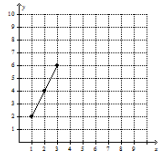
a. It is a nonlinear function because the input values are increasing.
b. It is a linear function because there is a constant rate of change in both the input and output values.
c. It is a linear function because the input values are decreasing.
d. It is a nonlinear function because there is a constant rate of change in both the input and output values.

Two functions, function A and function B, are shown below:

Function A

x	y
7	21
8	24
9	27

Function B



a. The rate of change of function A is greater than the rate of change of function B.
b. The rate of change of both functions is 2.
c. The rate of change of function B is greater than the rate of change of function A.
d. The rate of change of both functions is 3.

A standard showerhead in Reyna's house dispenses 9 gallons of water per minute. Reyna changed this showerhead to an energy-saving one. The equation shows the amount of water dispensed, y, as a function of the number of minutes, x, for the new showerhead.

$y = 3x$

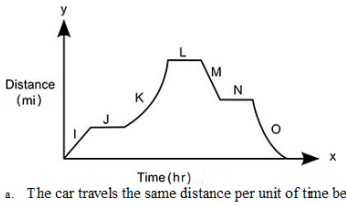
How much water does Reyna save each day with the change in showerheads if he uses the shower for 9 minutes each day?

a. 15 gallons
b. 28 gallons
c. 54 gallons
d. 81 gallons

Which of the following is a linear function?

a. $y = 5x^4 + 9$
b. $y = -3x^5 + 2$
c. $y = -9x - 5$
d. $y^3 = 2x + 5$

The graph shows a journey in a car. Which of the statements **most** likely describes the journey at the portion of the graph labeled K?



a. The car travels the same distance per unit of time because the portion shows a linear, increasing function.
b. The car travels different distances per unit of time because the portion shows a linear, increasing function.
c. The car travels the same distance per unit of time because the portion shows a nonlinear, increasing function.
d. The car travels different distances per unit of time because the portion shows a nonlinear, increasing function.