



MATHS

BOOKS - INDEPENDENTLY PUBLISHED

MATHS (ENGLISH)

IMPROVING YOUR MATH SCORE

Basic Math Problems

1. What is 4% of 1,000?

A. 4

B. 4.4

C. 40

D. 44

Answer: C



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2. For all x , $(x + 4)(x - 5) = ?$

A. $x^2 - 20$

B. $x^2 - x - 20$

C. $2x - 1$

D. $2x^2 - 1$

Answer: B



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3. If $x + y = 1$, and $x - y = 1$, then $y = ?$

A. -1

B. 0

C. $\frac{1}{2}$

D. 1

Answer: B



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4. What is the slope of the line containing the points $(-2, 7)$ and $(3, -3)$?

A. 0.04

B. $\frac{1}{4}$

C. 0

D. -2

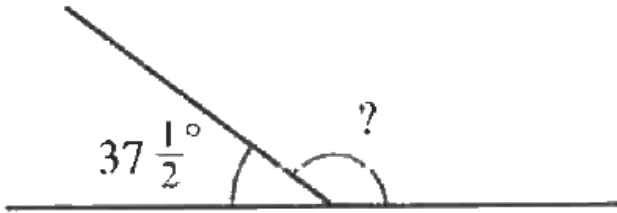
Answer: D



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5. If the measure of an angle is $37\frac{1}{2}^\circ$, what is the measure of its supplement, shown in the

figure below?



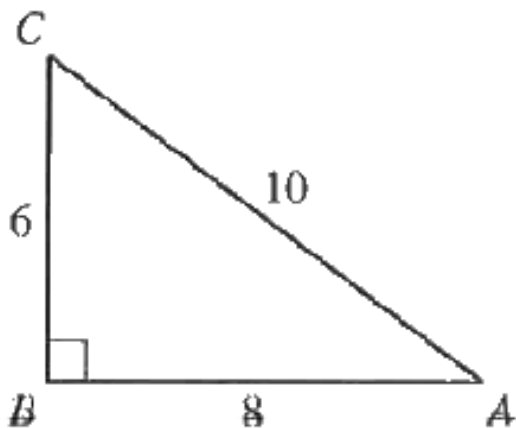
- A. $\left(52\frac{1}{2}\right)^\circ$
- B. $\left(62\frac{1}{2}\right)^\circ$
- C. $\left(127\frac{1}{2}\right)^\circ$
- D. $\left(142\frac{1}{2}\right)^\circ$

Answer: D



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6. What is the sine of $\angle A$ in the triangle below?



A. 0.30

B. 0.50

C. 0.60

D. 0.75

Answer: C



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Basic Math Problems In Settings

1. What is the total cost of 2.5 pounds of bananas at \$0.34 per pound and 2.5 pounds of tomatoes at \$0.66 per pound?

A. \$1.00

B. \$2.40

C. \$2.50

D. \$3.50

Answer: C



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2. The relationship between temperature expressed in degrees fahrenheit (F) and degrees Celsius (C) is given by the formula

$$F = \frac{9}{5}C + 32$$

If the temperature is 14 degrees Fahrenheit,
what is it in degrees Celsius?

A. -10°

B. -12°

C. -14°

D. -16°

Answer: A



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3. Amy drove the 200 miles to New Orleans at an average speed 10 miles per hour faster than her usual average speed. If she completed the trip in 1 hour less than usual, what is her usual driving speed, in miles per hour?

A. 20

B. 30

C. 40

D. 50

Answer: C



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4. A map is laid out in the standard (x,y) coordinate plane. How long in units is an airplane's path on the map as the airplane flies along a straight line from city A located at $(20,14)$ to City B located at $(5,10)$?

A. $\sqrt{1,201}$

B. $\sqrt{241}$

C. $\sqrt{209}$

D. 7

Answer: B



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5. A person 2 meters tall casts a shadow 3 meters long. At the same time, a telephone pole casts a shadow 12 meters long, How many meters tall is the pole?

A. 4

B. 6

C. 8

D. 11

Answer: C



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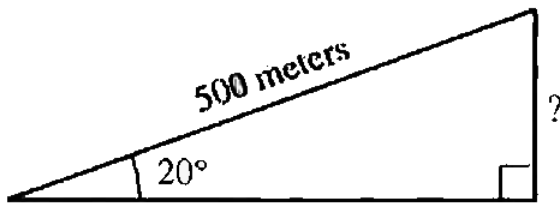
6. The hiking path to the top of a mountain makes at the steepest place, an angle of 20° with the horizontal, and it maintains this constant slope for 500 meters, as illustrated

below. Which of the following is the closest approximation to the change in elevation, in meters, over this 500 meter section?

(Note: You may use the following values, which are correct to 2 decimal places:

$$\cos 20^\circ \approx 0.94, \sin 20^\circ \approx 0.34, \tan 20^\circ \approx 0.36$$

)



A. 20

B. 170

C. 180

D. 250

Answer: B



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Very Challenging Problems

1. If 537^{102} were calculated, it would have 279 digits. What would the digit farthest to the right be (the ones digit)?

A. 1

B. 3

C. 4

D. 9

Answer: D



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2. If $a < -1$, which of the following best describes a general relationship between a^3 and a^2 ?

A. $a^3 > a^2$

B. $a^3 < a^2$

C. $a^3 = a^2$

D. $a^3 = -a^2$

Answer: B



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3. If $\left(\frac{4}{5}\right)^n = \sqrt{\left(\frac{5}{4}\right)^3}$, then $n = ?$

A. $-\frac{3}{2}$

B. -1

C. $-\frac{2}{3}$

D. $\frac{2}{3}$

Answer: A



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4. In the standard (x,y) coordinate plane, the triangle with vertices at $(0,0)$, $(0,k)$ and $(2,m)$, where m is constant, changes shape as k changes shape as k changes. What happens to

the triangle's area, expressed in square coordinate units, as k increases starting from 2?

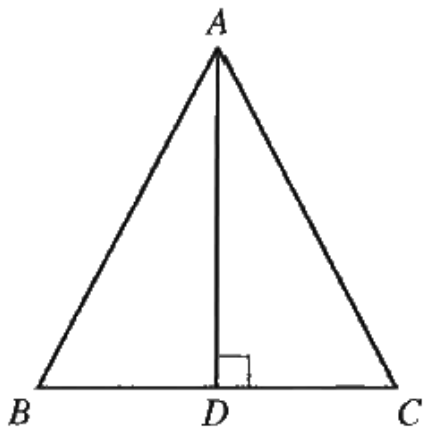
- A. The area increases as k increases
- B. The area decreases as k increases
- C. The area always equals 2
- D. The area always equals m

Answer: A



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5. In the figure below, $\overline{AB} \equiv \overline{AC}$ and \overline{BC} is 10 units long. What is the area, in square inches, of $\triangle ABC$?



A. 12.5

B. 25

C. $25\sqrt{2}$

D. Cannot be determined from the given information

Answer: D



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6. A bag of pennies could be divided among 6 children, or 7 children, or 8 children, with each getting the same number and with 1 penny left over in each case. What is the smallest number of pennies that could be in the bag?

A. 22

B. 43

C. 57

D. 169

Answer: D



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7. There are n students in a class. If, among those students, $p\%$ play at least 1 musical instrument, which of the following general

expressions represents the number of students who play No musical instrument?

A. np

B. $.01np$

C. $\frac{(100 - p)n}{100}$

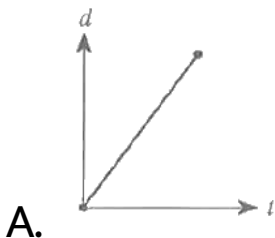
D. $\frac{(1 - p)n}{.01}$

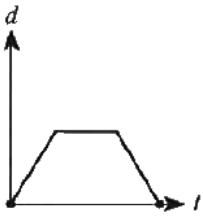
Answer: C



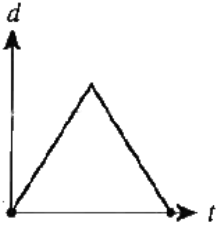
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8. Starting at her doorstep, Ramona walked down the sidewalk at 1.5 feet per second for 4 seconds, Then she stopped for 4 seconds, realizing that she had forgotten something. Next she returned to her doorstep along the same route at 1.5 feet per second. The graph of Ramona's distance (d) from her doorstep as a function of time (t) would most resemble which of the following?

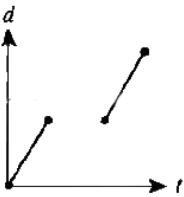




B.



C.



D.

Answer: D



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9. An object detected on radar is 5 miles to the east, 4 miles to the north, and 1 mile above the tracking station. Among the following, which is the closest approximation to the distance, in miles, that the object is from the tracking station?

A. 6.5

B. 7.2

C. 8.3

D. 9.0

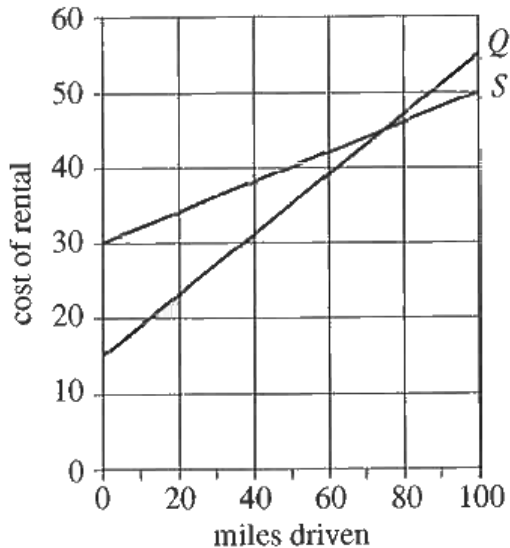
Answer: A



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10. At both Quick Car Rental and Speedy Car Rental, the cost, in dollars, of renting a full-size car depends on a fixed daily rental fee and a fixed charge per mile that the car is driven. However, the daily rental fee and the charge per mile are not the same for the 2 companies. In the graph below, line Q represents the total cost for Quick Car Rental and line S represents

the total cost for Speedy Car Rental.



Robert plans to rent a full-size car for 1 day and drive only 50 miles. If his only consideration is to incur the least cost, which company should he choose?

A. Quick Car Rental, because the cost is \$5.00 less.

B. Quick Car Rental, because the cost is \$15.00 less.

C. Either company, because the costs are equal.

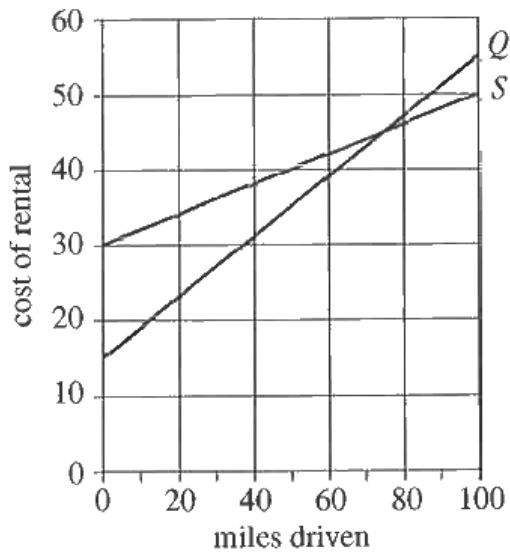
D. Speedy Car Rental, because the cost is \$5.00 less.

Answer: A



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11. At both Quick Car Rental and Speedy Car Rental, the cost, in dollars, of renting a full - size car depends on a fixed daily rental fee and a fixed charge per mile that the car is driven. However, the daily rental fee and the charge per mile are not the same for the 2 companies. In the graph below, line Q represents the total cost for Quick Car Rental and line S represents the total cost for Speedy Car Rental.



If you rent a full-size car from Quick Car Rental for 1 day, how much more would the total rental cost be if you drove the car 78 miles than if you drove it 77 miles?

A. \$0.10

B. \$0.15

C. \$0.20

D. \$0.40

Answer: D

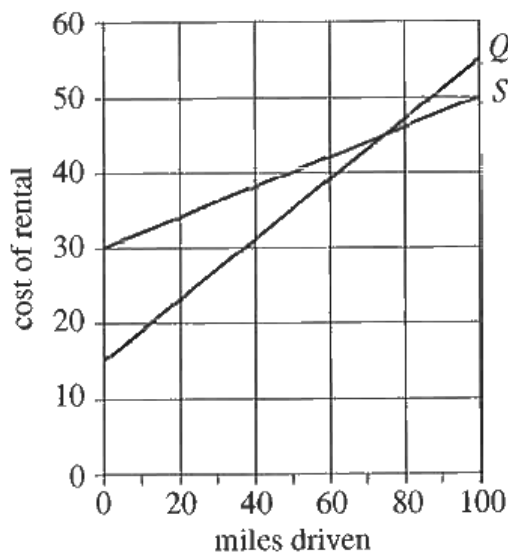


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12. At both Quick Car Rental and Speedy Car Rental, the cost, in dollars, of renting a full-size car depends on a fixed daily rental fee and a fixed charge per mile that the car is driven. However, the daily rental fee and the charge

per mile are not the same for the 2 companies.

In the graph below, line Q represents the total cost for Quick Car Rental and line S represents the total cost for Speedy Car Rental.



What would be the total cost of renting a full-size car from Speedy Car Rental for 1 day and driving the car 150 miles?

A. \$ 60

B. \$ 75

C. \$ 85

D. \$ 90

Answer:



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