1) When x = 4 and y = −3, the value of $2x^2 − 2y$ is

    a) 10
    b) 22
    c) 26
    d) 38
    e) 54

2) A car gets 30 miles p
   how much will it cost

    a) $177
    b) $269
    c) $299
    d) $508
    e) $538

200 SAT/ACT Math Practice Questions

(and, Solutions)

by Lance Friedman

3) Find the greatest common factor of 36, 84, and 132.
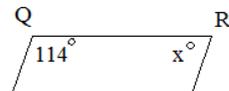
    a) 2
    b) 4
    c) 6
    d) 10
    e) 12

4) The length of a rectangle is 3 more than twice the width. Which
   gives the perimeter (p) of the rectangle in terms of the width (w

    a) p = w(2w + 3)
    b) p = w(2w − 3)
    c) p = 3w + 3
    d) p = 3w − 3
    e) p = 2(3w + 3)

5) For quadrilateral PQRS, sides PQ and RS are parallel for what value of x ?

    a) 66
    b) 72
    c) 76

Q   R
114°   x°

PREVIEW/SAMPLE

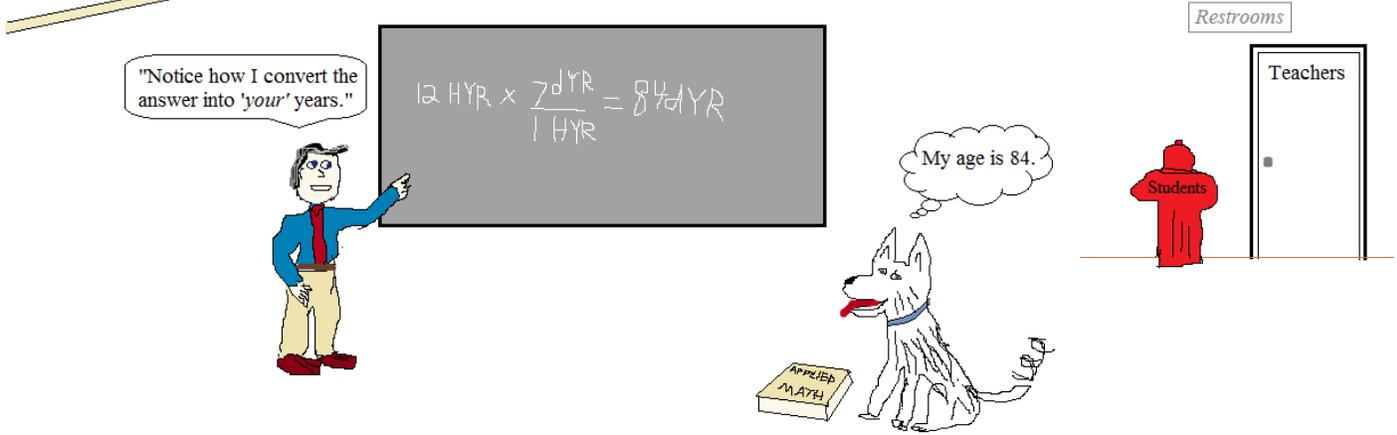200 SAT/ACT Math Questions (and, Solutions)

Introduction

Three key aspects of a standardized test are knowledge of content, time management, and accuracy. The following practice quizzes will address all 3 aspects and likely improve your scores.

1) *Content* – The questions are composed from algebra, geometry, and basic trigonometry. You may discover specific math subjects you need to review or relearn. (**Note: Some of the questions are difficult and meant to challenge you. Don't get discouraged!). Solutions follow each test.

2) *Time Management* – Each section is 20-30 questions and should be completed at a rate of 1 minute per question. (e.g. if the quiz is 20 questions, try to complete the quiz in 20 minutes or less). Practice working with a time limit. (**Suggestion: Do the easy questions first! Skip the time-consuming, difficult problems – save them for later.)

3) *Accuracy* – Read the questions carefully!

Best of luck!

Lance

www.mathplane.com

Diophantus,
Oka, &
Gauss
School of Mathematics

Grades K-9

Teaching an Old
Dog new Tricks

Restrooms

Teachers

"Notice how I convert the answer into *'your'* years."

$$12\ HYR \times \frac{7\,dYR}{1\ HYR} = 84\,dYR$$

My age is 84.

Students

APPLIED MATH

LanceAF #30 4-29-12
mathplane.com

It's never too late to learn mathematics!

Contents

1) When x = 4 and y = −3, the value of $2x^2 - 2y$ is

    a) 10

    b) 22

    c) 26

    d) 38

    e) 54

2) A car gets 30 miles per gallon. If gas costs $3.90 per gallon, approximately how much will it cost to travel 2300 miles?

    a) $177

    b) $269

    c) $299

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3) Find the greatest common factor of   36, 84, and 132.

    a) 2
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4) The length of a rectangle is 3 more than twice the width. Which of the following gives the perimeter (p) of the rectangle in terms of the width (w)?

    a) $p = w(2w + 3)$

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    d) $p = 3w - 3$

    e) $p = 2(3w + 3)$

5) For quadrilateral PQRS, sides PQ and RS are parallel for what value of x ?

    a) 66

    b) 72

    c) 76

    d) 88

    e) 114
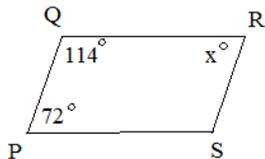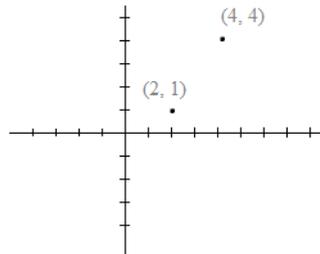
6) How many rational numbers are between 2 and 8?

   a) 3
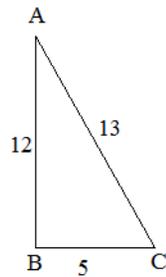   b) 4
   c) 6
   d) 12
   e) infinitely many

7) In the coordinate plane below, two of the vertices of an isosceles triangle are shown.
   What is the coordinate of the third vertex?

   a) (-4, 4)

   b) (0, -2)

   c) $(3, 2\frac{1}{2})$

   d) (4, -2)

   e) (5, 1)

8) What is the cosine of angle A ?

   a) 5/13
   b) 12/13
   c) 5/12
   d) 12/5
   e) 13/12

9) A combo pack at the movies consists of 1 drink, 1 popcorn, and 1 candy bar.
   If there are 5 flavors of soda, 1 size of popcorn, and 6 varieties of candy, how many
   different combo packs are possible?

   a) 5
   b) 6
   c) 11
   d) 12
   e) 30

10) Which of the following is a factor of $2x^2 + 5x - 7$?

   a) $x - 1$
   b) $x - 7$
   b) $2x + 5$
   c) $2x - 5$
   d) $5x + 14$

1) When x = 4 and y = −3, the value of $2x^2 − 2y$ is

   a) 10

   b) 22

   c) 26

   d) 38

   e) 54

$2(4)^2 − 2(-3) =$

$2 \cdot 16 + 6 =$

$= 38$

2) A car gets 30 miles per gallon. If gas costs $3.90 per gallon, approximately
how much will it cost to travel 2300 miles?

   a) $177

   b) $269

   c) $299

   d) $508

   e) $538

$\dfrac{2300 \text{ miles}}{30 \text{ miles/gallon}} = 76.67 \text{ gallons}$

76.67 gallons · $3.90/gallon = $299

(It will take 76.67 gallons to travel 2300 miles..
And, it will cost $299 to buy 76.67 gallons of gas..)
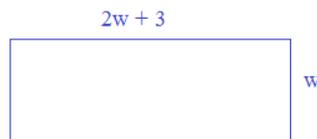
3) Find the greatest common factor of 36, 84, and 132.

   a) 2

   b) 4

   c) 6

   d) 10

   e) 12

factors of 36:   1, 2, 3, 4, 6, 9, 12, 18, 36
factors of 84:   1, 2, 3, 4, 6, 7, 12, 14, 21, 28, 42, 84
factors of 132: 1, 2, 3, 4, 6, 11, 12, 22, 33, 44, 66, 132
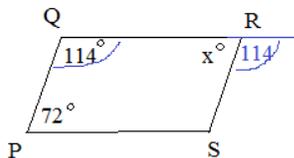
(1, 2, 3, 4, 6, and 12 are common factors)

4) The length of a rectangle is 3 more than twice the width. Which of the following
gives the perimeter (p) of the rectangle in terms of the width (w)?

   a) p = w(2w + 3)

   b) p = w(2w − 3)

   c) p = 3w + 3

   d) p = 3w − 3

   e) p = 2(3w + 3)

2w + 3

w

5) For quadrilateral PQRS, sides PQ and RS are parallel for what value of x ?

   a) 66

   b) 72

   c) 76

   d) 88

   e) 114

Q   R

114°   x° 114

72°

P   S

Since PQ and RS are parallel, angles R and Q must be
supplementary.

x + 114 = 180
x = 66

6) How many rational numbers are between 2 and 8?

   a) 3
   b) 4
   c) 6
   d) 12
   e) infinitely many

A rational number is any number that can be expressed as a fraction. (written as a ratio of integers)

there are an infinite number of fractions between 2 and 8...
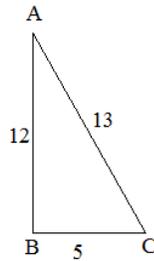2.002   2.03   2.000034 etc. are all rational numbers...

7) In the coordinate plane below, two of the vertices of an isosceles triangle are shown. What is the coordinate of the third vertex?

   a) (-4, 4)

   b) (0, -2)

   c) $(3, 2\frac{1}{2})$

   d) (4, -2)

   e) (5, 1)

(4, 4)

(2, 1)

(4, -2)
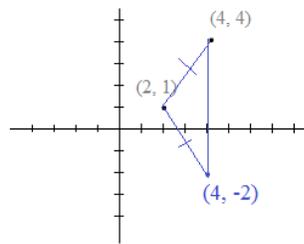
8) What is the cosine of angle A ?

   a) 5/13

   b) 12/13

   c) 5/12

   d) 12/5

   e) 13/12

A

12   13

B   5   C

$cosA = \dfrac{\text{adjacent}}{\text{hypotenuse}} = \dfrac{12}{13}$

9) A combo pack at the movies consists of 1 drink, 1 popcorn, and 1 candy bar. If there are 5 flavors of soda, 1 size of popcorn, and 6 varieties of candy, how many different combo packs are possible?

   a) 5
   b) 6
   c) 11
   d) 12
   e) 30

5   x   1   x   6   =   30

soda choices   popcorn choices   candy choices

10) Which of the following is a factor of $2x^2 + 5x - 7$?

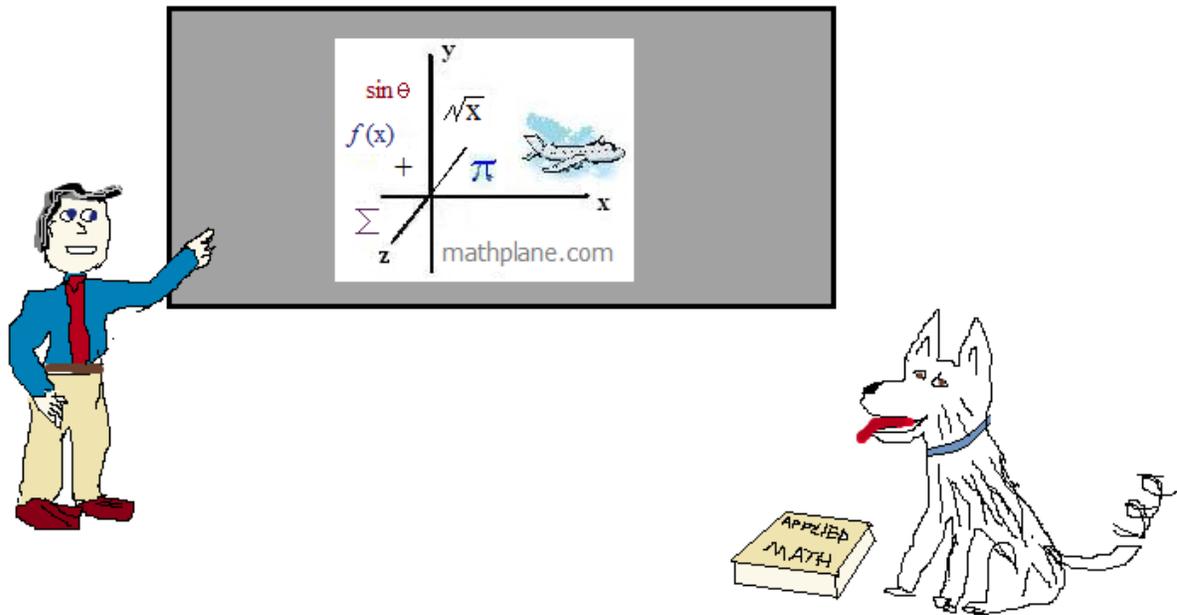   **a) x − 1**
   b) x − 7
   b) 2x + 5
   c) 2x − 5
   d) 5x + 14

$2x^2 + 5x - 7 = (2x + 7)(x - 1)$

This is a PREVIEW file.

If you'd like to see more SAT/ACT test prep materials, visit

Mathplane.com or Mathplane.org (for mobile).