ACT Practice Problems

1. On a trip of 500 miles, how many minutes slower is it to travel at 50 miles per hour rather than 60 miles per hour?

2. Three bags each contain three number tiles, a 1, a 2, and a 3. If you pull one tile from each bag and add the three numbers together, what is the probability of getting a sum of 6?

ACT Practice Problems

3. A dance company is planning a program that will consist of one ballet, one tap, and one jazz routine. In its repertoire are five ballet, three jazz, and six tap routines. How many different programs are possible?

4. Which of these numbers is between 6 and 7?

    a. $5\sqrt{2}$ b. $4\sqrt{3}$ c. $2\sqrt{5}$ d. $\sqrt{35}$

ACT Practice Problems

5. 180 is 45% of what number?

    [a] 400 [b] 340 [c] 300 [d] 200

6. During the last 10 years, the population of a town increased from 6000 to 10,320. What percent of increase does this represent?

7. Solve. $3(8-x) = -6x + 15$

ACT Practice Problems

8. To keep up with rising expenses, a motel manager needs to raise the $40 room rate by 22%. What will be the new rate?

9. The total cost for renting a car is $30 a day plus 28½ cents for each mile the car is driven. What is the total cost of renting the car for 5 days and driving 350 miles?

ACT Practice Problems

10. On the first day of school, Mr. Vilani gave his third-grade students 5 new words to spell. Each day after that, he gave the students 3 new words. In the first 20 days of school, how many new words had he given the students to spell?
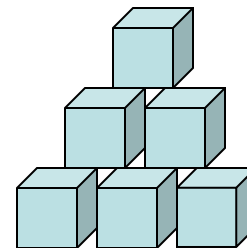
11. Simplify $(4x^2y)^3$.

12. The sum of the real numbers x and y is 11. Their difference is 5. What is the value of xy?

ACT Practice Problems

13. If I were to arrange stacks of blocks so that each successive level of blocks has 1 fewer block than the level below it and the top level has 1 block, how many blocks would have to be used to build a 12-level stack?

14. As a salesperson, your commission is directly proportional to the dollar amount of sales you make. If your sales are $800, your commission is $112. How much commission would you earn if you had $1,400 in sales?

15. If $x>1$, then which of the following has the least value?
   [a] $\sqrt{x}$ [b] $\sqrt{2x}$ [c] $\sqrt{x} \cdot \sqrt{x}$
   [d] $x\sqrt{x}$ [e] $x \cdot x$

16. Charles defined a new operation, ◊, on a pair of ordered pairs as follows: $(a,b) ◊ (c,d) = \dfrac{ac + bd}{ab - cd}$

What is the value of $(2,1) ◊ (3,4)$?

ACT Practice Problems

17. Simplify $\left[\dfrac{3x + 7}{5}\right]^2$ FOIL

18. If 1/3k + 1/4k = 1, what is k?

19. In any parallelogram ABCD, it is always true that the measures of <ABC and <BCD …

a. Add up to 90

b. Each equal 90

c. Add up to 180

d. Are each less than 90

ACT Practice Problems

20. What is the slope of any line perpendicular to the line 8x + 9y = 3 in the standard coordinate plane?

21. If x > |y|, which of the following is the solution statement for x when

    y = -4?

    a. x is any real number

    b. x > 4

    c. x < 4

    d. x > 4 or x < -4

ACT Practice Problems

22. The perimeter of a parallelogram is 72 inches, and one side measures 12 inches. What are the lengths of the other 3 sides?

23. When $y = x^2$, which of the following expressions is equivalent to $-y$?

   a. $(-x)^2$ b. $-x^2$

   c. $-x$ d. x e. x^{-2}

24. If $7 + 3x = 22$, then $2x = $ <u>?</u>

ACT Practice Problems

25. What polynomial must be added to x^2-2x+6 so that the sum is $3x^2+7x$?

26. Ms. Lewis plans to drive 900 miles to her vacation destination, driving at an average of 50 miles per hour. How many miles per hour faster must she average, while driving, to reduce her total driving time by 3 hours? $d = r \cdot t$

27. Find the GCF of 216x and $180x^2$.

ACT Practice Problems

28. Minnie cut a board in the shape of a regular hexagon, as shown below, and pounded in a nail at each vertex. How many rubber bands will she need in order to stretch a different rubber band across every possible pair of nails?
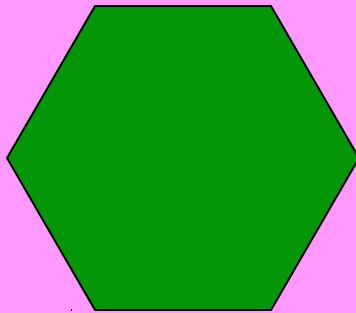
29. What is the factored form of the expression $5x^2-13x-6$?

ACT Practice Problems

30. The slope of the line with equation y=ax+b is greater than the slope of the line with equation y=cx+b. Which of the following statements must be true about the relationship between a and c?

   a. a<c b. a=c   c. a>c   d. a>c+1

31. To increase the mean of 4 numbers by 2, by how much would the sum of the 4 numbers have to increase?

ACT Practice Problems
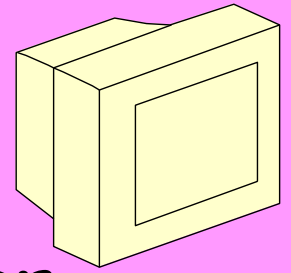
32. Television screen sizes are the diagonal length of the rectangular screen. Hector recently changed from watching a television with a 13-inch screen to a television with a similar 19-inch screen. If a boxcar appeared 8 inches long on the 13-inch screen, how long, to the nearest inch, will it appear on the 19-inch screen?

33. If the length of a 13-inch TV screen is 12 inches, what is its width?

ACT Practice Problems

34. For a birthday party, Marissa bought three cartons of ice cream at $4.59 each and two packages of plastic bowls at $3 each. If food is not taxed and non-food grocery items are taxed at the rate of 5 %, what was her total bill?

35. Simplify. $4^0+3^{-1}+2^{-2}+1^{-3}$

36. Multiply. $(2x^4y)(3x^5y^8)$
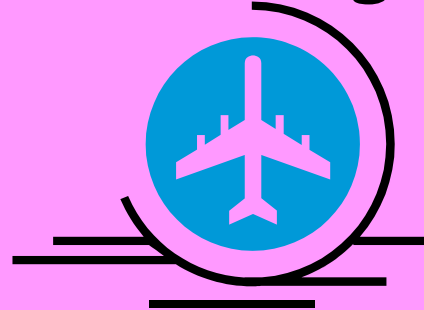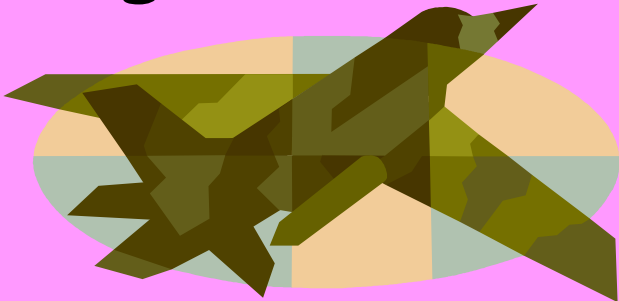
ACT Practice Problems

37. Meg pounded a stake into the ground. When she attached a leash to both the stake and her dog's collar, the dog could reach 9 feet from the stake in any direction. Using 3.14 for π, what is the approximate area of the lawn, in square feet, the dog could reach from the stake?

38. Simplify. $|7(-3) + 2(4)| =$

ACT Practice Problems

39. A flight instructor charges $50 per lesson, plus an additional fee for the use of his plane. The charge for the use of the plane varies directly with the square root of the time the plane is used. If a lesson plus 16 minutes of plane usage costs $90, what is the total amount charged for a lesson having 36 minutes of plane usage?

ACT Practice Problems

40. Which of the following expresses the number of meters a contestant must travel in a 3-lap race where the course is a circle of radius R meters?

    a. 3R   b. 3πR   c. 3πR²   d. 6πR

41. When graphed in the standard (x,y) coordinate plane, the lines x=-3 and y=x-3 intersect at what point?

    e. (0,-3)   f. (-3,0)

    g. (-3,-3)   h. (-3,-6)

ACT Practice Problems

42. In what order should 5/3, 7/4, 6/5, and 9/8 be listed to be arranged by increasing size?

43. Which two of the following expressions has a positive value for all x and y such that x>0 and y<0?

a. y-x

b. x+y

c. x-y

d. $\dfrac{x^2}{y}$

e. $\dfrac{x}{y^2}$
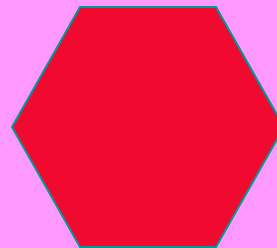
ACT Practice Problems

44. What is the maximum number of distinct diagonals that can be drawn in the hexagon shown?

45. A bag contains 6 red marbles, 5 yellow marbles, and 7 green marbles. How many additional red marbles must be added to the 18 marbles already in the bag so that the probability of randomly drawing a red marble is 3/5?

a. 12   b. 16   c. 18   d. 24

ACT Practice Problems

46. Which of the following figures in a plane separates it into half-planes?
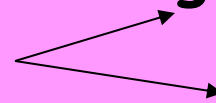
a. a line   b. a ray   c. an angle   d. a point

47. If $i^2=-1$, then $(4 + i)^2 = ?$ FOIL

a. 15   b. 17   c. 15+8i d. 17+8i

48. What is the slope of the line through the points (-5,2) and (6,7)?

Use the slope formula!

ACT Practice Problems

49. Jason puts $500 into a savings account that earns simple interest of 2% per year. How much money will he have in the account after 3 years?

$$I = prt$$

50. Two trains leave the same train station and travel in opposite directions. Train A travels at 75 miles per hour, and Train B travels at 90 miles per hour. How far apart are the trains after two hours?

$$d = rt$$

ACT Practice Problems

51. On a certain state's drivers' exam, an applicant must get at least 70% of the 400 possible points in order to pass. If an applicant raises his score on his second attempt by 25 points and passes with the minimum required score, what score did he receive on his first attempt?

52. How many inches is the radius of a circle whose area is 24π square inches?

ACT Practice Problems

An advertisement for a men's clothing store reads, **"Men's shirts $22 each; 3 for $55. Receive 10% off any sale of $100 or more."**

53. What is the total cost of 8 shirts?

54. What is the greatest number of shirts you can buy if you have $100 to spend?
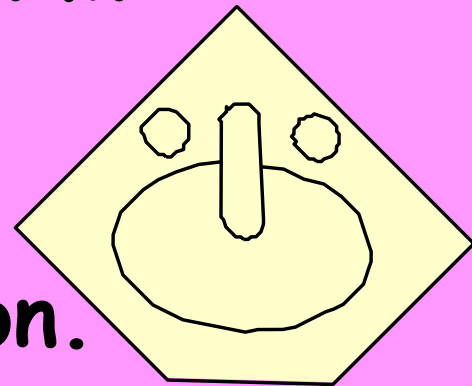
ACT Practice Problems

55. Of 42 horses in a stable, 1/3 are black, and 1/6 are white. The rest are brown. What is the number of brown horses?

56. The point (2,6) is the midpoint of the line segment connecting (-1,3) to P(x,y). What is the value of 2x+y?

57. What is the value of $y^0 + y^{-1}$ when y = 1/2?

ACT Practice Problems

58. A faucet is dripping at a constant rate. At noon on Sunday 3 ounces of water have dripped from the faucet into a holding tank, and at 5 p.m. a total of 7 ounces have dripped into the tank. How many total ounces will have dripped into the tank by 2 a.m. on Monday?

59. Solve this quadratic equation.

$$x^2 - 8x - 33 = 0$$

ACT Practice Problems

60.

y

(1,2)

(2,1)

(0,0)

x
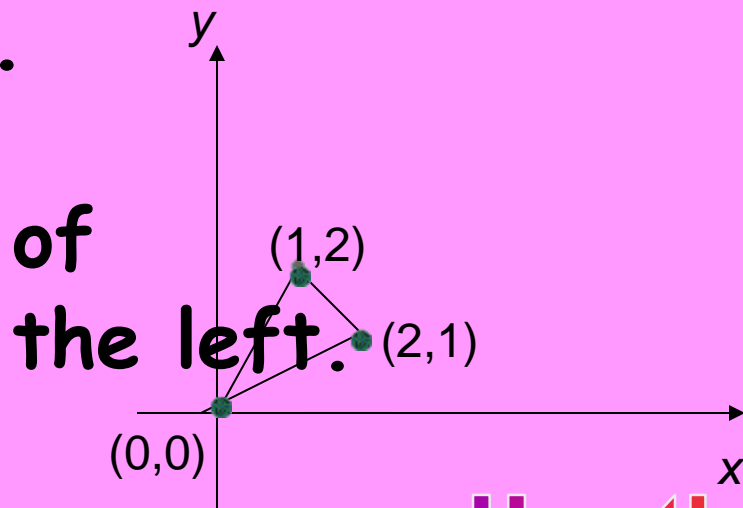
Find the perimeter of the triangle on the left.

Use the distance formula !

61. If x and y are unequal positive integers and xy=36, what is the least possible value of x+y?

?????

ACT Practice Problems

62. The price of a hat and scarf is $38. The hat costs $3 more than the scarf. What is the price of the scarf?

63. If A and B are <u>positive integers</u> and $A^2 - B^2 = 36$, what are A and B ?

ACT Practice Problems

64. Two rectangles have the same area. One is twice as long as the other. If the longer rectangle has a length of L and a width of W, which of the following is the perimeter of the shorter rectangle?

    a. 2L + 2W   b. 2L + 4W

    c. 4L + 2W   d. L + 4W

65. Solve. $\sqrt{2} \, x = \sqrt{50}$

ACT Practice Problems

66. If a = -3 and b = -2a, what is the value of ab – 3a ?

67. If (x+2)(x-5)=8, then which of the following must be true?

    a. x+2=0   b. x-5=0

    c. x-6=0   d. x-5=8

68. The regular price for a certain prom dress is $250. If a sale reduces the price by 25%, what is the sale price of the dress?

ACT Practice Problems

69. If the average of x and y is m, and z=2m, what is the average of x, y, and z?   A. m   B. 2m/3

C. 4m/3   D. 3m/4

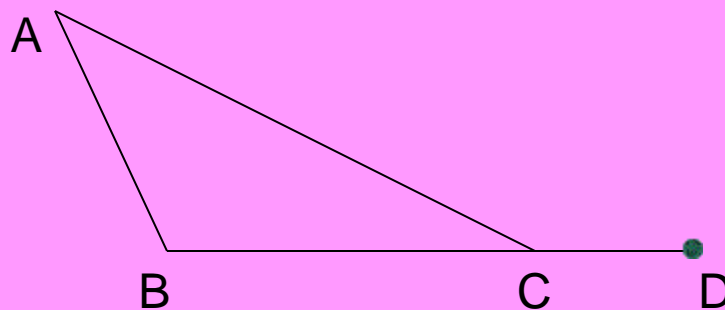70. In the figure below, <BAC measures 30°, <ABC measures 110°, and points B, C, and D are collinear. What is the measure of <ACD ?

a. 150°   b. 140°

c. 80°   d. 40°

A

B   C   D

ACT Practice Problems

71. In an isosceles right triangle, if one of the legs is 10 feet long, what is the length of the hypotenuse?

72. In a bag of 400 jelly beans, 25% of them are red. If you randomly pick a jelly bean from the bag, what is the probability that it is not red?

    a. ¼   b. ½   c. ¾   d. 3/8

73. What is the midpoint between (3,6) and (9,4) ?

ACT Practice Problems

74. For all triangles ΔXYZ where side XZ is longer than side YZ, which of the following statements is true?

a. The measure of <X is always greater than the measure of <Y

b. The measure of <X is always equal to the measure of <Y

c. The measure of <X is less than the measure of <Y

d. The measure of <X is sometimes less than the measure of <Y and sometimes greater than the measure of <Y Draw a picture!

ACT Practice Problems

75. The sides of a square are 3cm long. One vertex of the square is at (3,0) on a grid marked in cm units. Which 2 of the following points could also be a vertex of the square?

a. (1,2)   b. (6,0)   c.(-3,0)   d.(0,-3)

76. Draw a coordinate plane on your paper, and graph the lines 2x + y = 4 and y = x + 1. At what point do they cross?

ACT Practice Problems

77. In the figure below, ABCD is a square. Points are chosen on each pair of adjacent sides of ABCD to form 4 congruent right triangles, as shown below. Each of these has one leg that is twice as long as the other. What fraction of the area of square ABCD is shaded?

A   D

B   C
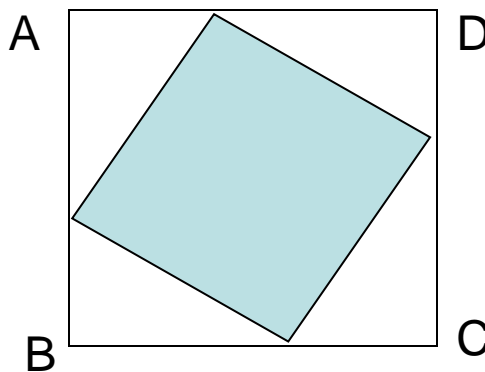
a. 1/9   b. 4/9   c.5/9   d. 8/9

ACT Practice Problems

78. If $\log_b x = p$ means the same as $b^p = x$, then what is the value of $\log_2 8$?

79. For real numbers a and b, when is the equation $|a+b| = |a-b|$ true?

   a. always
   b. only when a=b
   c. only when a=0 and b=0
   d. only when a=0 or b=0
   e. never

ACT Practice Problems

80. For some real number A, the graph of the line y= (A+1)x + 8 in the standard (x,y) coordinate plane passes through (2,6).   What is the slope of this line?

81. For all real numbers *b* and *c* such that the product of *c* and 3 is *b*, which of the following expressions represents the sum of *c* and 3 in terms of *b*?

a. b+3   b. 3b+3   c. $\underline{b+3}$ d. $\underline{b}$ + 3

$\qquad\qquad\qquad\qquad$ 3 $\qquad\qquad$ 3

ACT Practice Problems

82. Three lines intersect to form the triangle below. What is the measure of <X?

X

40   55
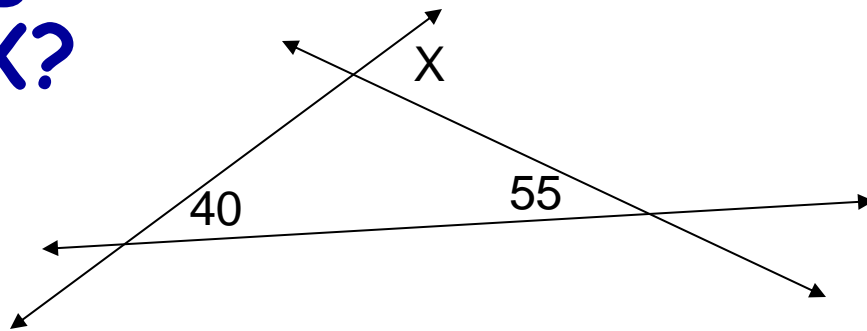
83. What is the measure of one of the interior angles of a regular hexagon?

S = 180(n-2)

84. What is the least possible integer that is separately divisible by each of 2, 4, 6, and 10?

ACT Practice Problems

85. Multiply. $(3+\sqrt{2})(4-\sqrt{2})$ **FOIL**

86. Rewrite the following equation in slope-intercept form, then graph it.
$$3x+y-2=0$$

87. At what value of x does the expression $|x-5|+2$ reach its minimum?

ACT Practice Problems

88. Factor $x^2+8x-20$.

89. If $x+6$ is a factor of x^2+Bx-6, then B=?

90. What is the complete solution set for the equation $|1-x|=x-1$?

A. All real numbers

B. No solution

C. All $x \geq 1$ only

D. only $x=1$

ACT Practice Problems

91. What is the probability of rolling a sum of 9 with 2 number cubes?

92. Of 250 people surveyed, 139 like the Braves, 118 like the Yankees, and 25 like both. How many people like neither the Braves nor the Yankees?

93. Which is greater, a single discount of 40% or 2 consecutive discounts of 20%?

ACT Practice Problems

94. A diameter of a circle has endpoints at (-1,3) and (-1,-2). Which is the closest to the circumference of the circle? (a) 6.3   (b) 9.4 (c) 12.7 (d) 15.7

95. Find the value of x.
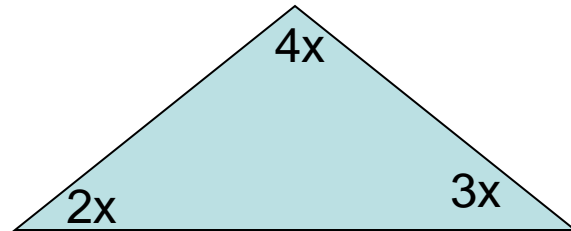
96. Find the 8th number in the sequence below.

-2, -20, -4, -40, -8, . . .

ACT Practice Problems

97. A recipe that makes 50 cookies takes 4 cups of flour, 3 cups of sugar, and 1 cup of butter. What amount of each ingredient above will be needed to reduce to number of cookies to 40?

98. Suzanne has an after-school job. This week she worked 3 hours 13 minutes on Monday, 4 hours 1 minute on Tuesday, 3 hours 10 minutes on Wednesday, and 3 hours 4 minutes on Thursday. What is the average amount of time she worked each day this week?

ACT Practice Problems

99. $-\sqrt{98}$ is between which 2 integers?

100. Three times 7 less than x equals 11 more than x. Find x.

101. I plan to order Fox's Big Daddy pizzas at the end of the term to reward students who have mastered at least 50 objectives. Each pizza has 21 slices. If 46 students reach their goal, how many pizzas do I need to order so each student gets at least 2 slices?

     What will be the cost of the pizzas if each one is $9, tax free?

ACT Practice Problems

102. Evaluate $a(a-\sqrt{b})^{-1}$ if a=4 and b=1/4.

103. An equilateral triangle with sides of length *s* has an area equal to $\dfrac{s^2\sqrt{3}}{4}$.

Find the length of one side of an equilateral triangle if its area is $25\sqrt{3}$ square units.

[a] $10\sqrt{3}$ [b] 5   [c] 10   [d] $5\sqrt{3}$

ACT Practice Problems

104. Three quarters of Andre's collection of coins is pennies. Of the remaining coins, 2/5 are quarters. If there are 280 coins in his collection, what is the value of the quarters?

105. Simplify.
       20/10+30x10+40/10²+50x10²

106.   A base angle of an isosceles triangle has measure 75°. What is the measure of the vertex angle?

ACT Practice Problems

107. How many revolutions does it take for a 6-inch diameter wheel to travel 15 feet? A. 30π   B. $\frac{30}{\pi}$ C. $\frac{15}{\pi}$

108. Find the radius of circle C if m<PQR=24 and the length of arc PR is 8π.

Remember that arc length is a portion of the circumference.
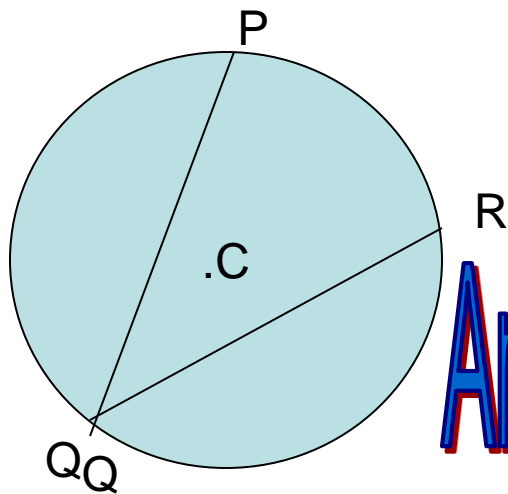
Arc Length=(central </360)(pi)(diameter)

ACT Practice Problems

109. If quadrilateral ABCD is a square of area 98 square meters, find AC.
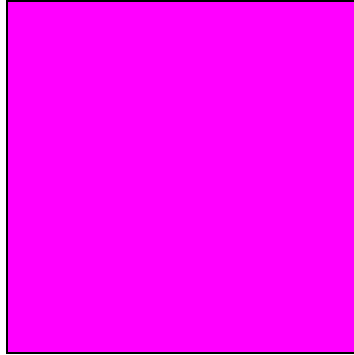
110. It took Rene exactly 9 minutes and 20 seconds to download a 1,400 kilobyte file onto her computer. At that same rate, how long would it take Rene to download a 2,000 kilobyte file?

ACT Practice Problems

111. Solve for x.

$$-[(x-4)-(3-2x)]=3-(5x+6)$$

112. If $\dfrac{x^3y^2}{z}$ is positive, then which of

the following could be true?

I.   x is positive and z is negative
II. x is zero
III. x, y, and z are all negative
IV. x is negative and z is positive

113. While shopping at a clothing store, Ben finds that a shirt and two ties cost $105, while two shirts and one tie cost $135. If the store charges the same price for all of its shirts and the same price for all of its ties, what is Ben's cost if he wants to buy just one tie?

A. $20   B. $25   C. $30

D. $35   E. $40

ACT Practice Problems

114. A store charges $20 for a box of 40 computer CDs, $13 for a box of 24, and $8 for a box of 10. What is the least amount of money, excluding tax, for which a customer can buy at least 100 CDs from this store?

115. Would it make a difference if they sold a box of 25 CDs for $13 instead of only 24? Explain.

ACT Practice Problems

116. What is the measure of one of the interior angles of an octagon?

Look at # 83 !!!

117. What is the smallest positive integer for which x-√5 > 5 is true?

118. 0.018/0.12 is equal to how many thousandths?

ACT Practice Problems

119. A line is parallel to the y-axis and passes through the point (2,3). Which of the following is the equation of this line?   A. y = 2   B. y=2x

   C. x = 2   D. y = x+1

120. The graph of the circle below lies entirely in which two quadrants?

   (x-4)² + (y+6)² = 25

ACT Practice Problems

121. What is the standard form of the equation of a circle if its center is the point (-3,9) and it has a radius of 4?

122. The area of a circle is 64 square inches. What is the length of its diameter?

A. 8   B. 16   C. $8/\sqrt{\pi}$ D. $16/\sqrt{\pi}$

123. If $2x=4x+1$, then $6x-2=$?

ACT Practice Problems

124. A circle has its center at (1,-1) and it passes through the point (5,2). Find the length of the circle's radius, then give the equation of the circle.

125. If x<0, and $3x^2-7x=6$, then x=?

ACT Practice Problems

126. $(.01)^4 = $?

A. 10^{-8} B. 10^{-6} C. 10^{-2} D. 10^2

127. The average of x numbers is 15. If two of the numbers are each increased by y, the new average will be increased by how much?

A. $2y$ B. $x/2y$ C. $2y/x$ D. $y+2$

ACT Practice Problems

128. The average of 6 test scores is 80. When 2 more tests are included, the average for all 8 tests is 85. What is the average score on the 2 added tests? a. 70 b. 85 c. 90 d. 95 e. 100

129. What is the area of a rectangle if three of its 4 vertices are located at (7,3), (-1,-6), and (-5,-2)?

Hint: Graph, then use the distance formula to find the length and width of the rectangle.

ACT Practice Problems

130. A positive number x is increased by 20 percent and then the result is decreased by 30 percent. The final result is equal to which of the following?

A. x is decreased by 50 percent
B. x is decreased by 16 percent
C. x is decreased by 10 percent
D. x is increased by 10 percent
E. X is increased by 16 percent

ACT Practice Problems

131. A phone company charges $1 per calling card call plus 25 cents per minute for the length of the call. If Jacob makes 10 calling card calls, half of which last exactly 1 minute and half of which last exactly 3 minutes, what is his cost for the 10 calls?

132. Multiply. (5+2i)(8-3i)

ACT Practice Problems

133. Find x. $\log_5 625 = x$

134. A painter calculates that one side of a house requires exactly 4 large cans of paint OR exactly 6 small cans. If all 4 sides of the house require identical amounts of paint, which collection of paint cans will cover all 4 sides with no waste? A. 2 large and 24 small

   B. 4 large and 18 small

   C. 6 large and 16 small

   D. 8 large and 8 small

ACT Practice Problems

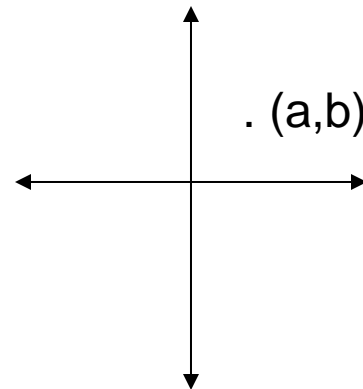135. In triangle ABC, AB=BC, and <ABC measures 70°. What is the measure of <BAC?

136. A point with coordinates (a,b) is plotted as shown below. The point is then reflected across the y-axis. Which of the following are the coordinates for the point after the reflection?

A. (-a,-b)   B. (a,-b)
C. (b,a)   D. (-a,b)

. (a,b)

ACT Practice Problems

137. The $414 price of a refrigerator consists of the original cost to the store plus a mark up of 15%. What did the store pay for the refrigerator?

138. If f(x) = -5x-20, find f(-4).

139. If f(x)=2x and g(x)=x², what is f(g(3)) ?

ACT Practice Problems

140. Tyrone wants to score 80% or better on today's 40-point math test. What is the least number of points Tyrone must score to achieve 80%?

141. You have 4 rectangular regions to be covered with cedar chips. One region is 2 ft. by 8 ft. The others are 1 ft. by 4 ft., 2 ft. by 20 ft., and 1 ft. by 5 ft. If a bag of cedar chips covers 10 square feet, how many bags of cedar chips will you need?

ACT Practice Problems

142. List the domain of the relation below. Is the relation a function?
{(1,5), (-1,5), (2,6), (-2,6)}

143. Write the converse of the statement "If the lights are on, then the store is open."

144. What quantity must be added to $4x^2+x-5$ to obtain x^2+5x+1?

ACT Practice Problems

145. Simplify. $(3x^3)^{-2}$

146. A dinner combination at a certain restaurant includes an appetizer, a main course, and a dessert. How many different dinner combinations are possible when choosing from 5 appetizers, 8 main courses, and 3 desserts?

147. Solve. $4x^2 - 9 = 0$

ACT Practice Problems

148. Which of the following sets of numbers could not represent the lengths of the sides of a triangle?

A. 5.5,6.5,10.5   B. 2.9,8.3,10.1

C. 1.6,9.2,9.2   D. 5.1,6.4,11.7

149. If $A=10^{B+C}$, what is $\log_{10}A$?

150. If 1 is a solution to the equation $x^2+hx+10=0$, what does h equal?

ACT Practice Problems

151. If 4 is the first term and 256 is the fourth term of a geometric progression, which of the following is the second term? 8,12,16,32, or 64

152. Points P, Q, R, and S lie on a line in the order given. Point R is the midpoint of segment QS, PR=5, and PS=7. How long is QS?

ACT Practice Problems

153. Factor. $3x^4 + 6x^2 - 45$

154. A quadrilateral has diagonals that do not bisect each other. Which of the following types of quadrilaterals could it be? A. parallelogram

      B. rectangle   C. rhombus

      D. square   E. trapezoid

155. Simplify. $\sqrt{9x^8y^{10}}$

ACT Practice Problems

156. Mary takes 2 medications throughout the day and night. One medication is to be taken every 6 hours and the other is to be taken every 4 hours. If Mary begins taking both medications at 7 AM and takes both medications on schedule, how many hours later will it be when she next takes both medications at the same time?

157. If the hypotenuse of a 30-60-90 triangle is 40 inches, how long is the short leg?

ACT Practice Problems

158. The 5 congruent circles below have
their centers lying on the same diameter of the
larger circle. Each circle is tangent to 2
other circles. If the area of each small
circle is 4π square units, what is the area of
the larger circle?
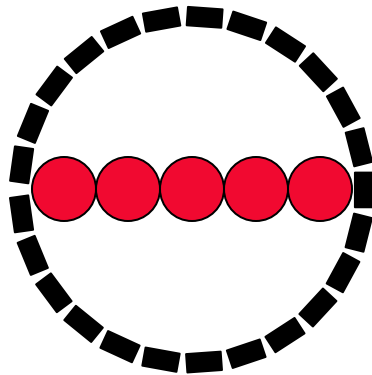
159. Solve. 20 - 5m ≥ -80

160. What is the tangent value for all acute angles of an isosceles right triangle?

161. A rectangle that measures 4 cm by 6 cm is divided into 24 squares with sides 1 cm in length. What is the total number of 1 cm long sides in those 24 squares. (Note: If 2 squares share a side, the side should be counted only once.)

ACT Practice Problems

162. The five positive integers a, a, a, b, and c have an average of a. What is the value of (b+c)/2 ?

a. a/3   b. a/2   c. a   d. 2a   e. 3a

163. The volume of a sphere is 4/3 πr^3, where r is the radius. The shapes of the planets Uranus and Earth are approximately spheres. The radius of Uranus is about 4 times that of Earth. About how many times the volume of Earth is the volume of Uranus?
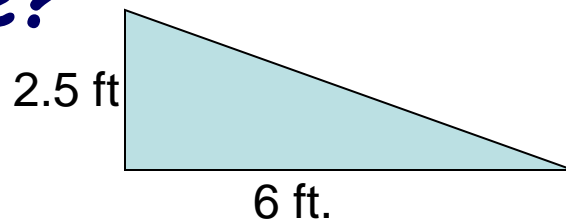
ACT Practice Problems

164. If $3x+a=9$, then, in terms of a, $x=$?

165. Pilar obtained estimates for cleaning her furnace from 2 heating companies. Lehman Heating's estimate was $30 for a service call plus $22 per hour. A-1 Heating's estimate was $35 for a service call plus $20 per hour. If the estimates were the same in both the total amount and the number of hours for cleaning, how many hours were reflected in the estimates?

a. 2   b. 2 ½   c. 3   d. 3 ½   e. 4

ACT Practice Problems

166. The legs of the right triangle below are doubled in length to become the legs of a new right triangle. What is the length, in feet, of the longest side of the new triangle?
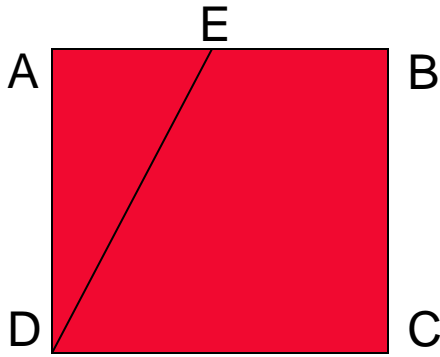
2.5 ft

6 ft.

167. If f(x)=x+3 and g(x)=5x-2, what is f(g(4))?

168. What is g(f(4))?

Are f(x) and g(x) inverses of each other?

ACT Practice Problems

169. In the figure below, ABCD is a square with side length 10 centimeters. The midpoint of segment AB is E. What is the area of region EBCD?

170. Which of the following is an equation for the line passing through (0,0) and (4,3)?

A. x-y=1   B. x+y=7

C. 3x+4y=25   D. 3x-4y=0

ACT Practice Problems

171. The table below contains information about the 1996 season baseball standings for the American League Eastern Division. Which team won the most games away from home in 1996?

Team	Wins	Losses	Winning Rate	Home win-loss Record
New York	92	70	.568	49-31
Baltimore	88	74	.543	43-38
Boston	85	77	.525	47-34
Toronto	74	88	.457	35-46
Detroit	53	109	.327	27-54

ACT Practice Problems

172. Benjamin is flying a kite using 130 feet of string. His string makes an angle of 40 degrees with the level ground. About how many feet above the ground is the kite when the string is taut?
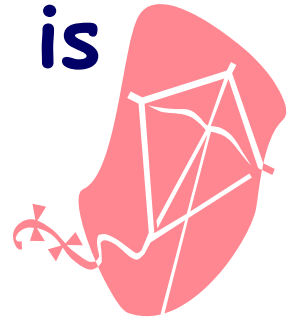
173. The interior angles of a quadrilateral are in the ratio 1:2:3:4. What is the measure of the largest interior angle?

ACT Practice Problems

174. 2 legs of a right triangle measure 37 inches and 45 inches. What is the cosine of the triangle's smallest interior angle?

175. From the top of a 120-foot lighthouse, a small sailboat is sighted on the water 500 feet from the base of the lighthouse. Find the angle of depression from the top of the lighthouse.

ACT Practice Problems:Answers

1. 105 minutes or 1 hour 45 minutes
2. 2/9=prob.   2 to 7 = odds
3. 90
4. (b) $4\sqrt{3}$
5. (a) 400
6. (a) 72%
7. -3
8. $48.80
9. $249.75
10. 62
11. $64x^6y$
12. 24

ACT Practice Problems: Answers

13. 78

14. 196

15. (a) √x

16. -1

ACT Practice Problems

ACT Practice Problems