

- d. 40 miles
 - e. 44 miles

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ax + 3y = 16. Let *b* be a positive number such that the system

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on mit 频 林 送 序 · 13. 19% $(\Im x + ay = b)$ has an infinite number of solutions. Then, correct to the nearest hundredth, *b* equals

0.60a.

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- b. 1.29
- 1.67 c. d. 3.87
- e. no unique answer

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8. If a is 50% larger than c and b is 25% larger than c, then a is what percent larger than b?

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- a. 20% matitute # # b. 25%
 - 50% 100%
 - 200% e.
 - 9. The cost of living in each quarter (3 months) increased by 2% over the previous quarter. To the nearest tenth of a percent, to what annual percentage rate of increase does this correspond? Astitute #

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- 2% a. 4.8% b. 8%
- c. d. 8.2%
- e. 16%
- +42⁷ is the ## # # 10. The units digit of 7^{42}

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- what is the area of the rectangle? 16. A rectangle has perimeter 24 inches. If the length of the diagonal of this rectangle is 10 inches, matitute # 3 mutute # # ? myitte #

 - b. 20 square inches
 - c. 22 square inches
- e. 32 square inches
- 面如此推新林塔路 而如此他新林後幣 加加加加加新林等隊 加甘加化物林省化 17. In the equation, 4x + y = 10, if an x-value is increased by 3, what would be the effect on the a. The value of y will decrease by 12.
 b. The value of y will decrease b
 c. The value corresponding y-value? 而如此他教林後然 而如此他教祥客院 柳林塔梯

 - c. The value of y will decrease to half as large.
 - d. The value of *y* will increase by 3.

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The value of y will be 3 times as large. e.

林塔梯 18. A new automobile is purchased for \$25,000. If $V = 25000(0.8)^x$ gives the car's value after x * 13 Ph years, then approximately how long will it take for the car to be worth half its purchase price?

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- a. 2 years
- c. 4 years d. 5 vc + years d. 5 years e. 6

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19. On a television show, a player receives five points for answering an easy question and eleven « points for a hard one. What is the largest integer that cannot be a contestant's total score in the tinstitute # game?

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- b. 39
- . 39 c. 43 d. 49 e.

いいははながが、後後 HUNITUR STATE c. 43 d. 49 e. 53 20. Given $6^{x+y} = 36$ and $6^{x+5y} = 216$, what is the value of *x*?

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- 4^{x²-x} 而如此此後蘇林後幾 而此此此新祥後 21. Find the sum of the solutions of the equation $8^{x^2+3x+10} = 4^{x^2-x}$ Talitute ## # 3 R INTE SAN AN 'S institute the th

a. -2.5 b. -7 🔊 c. -11 d. -12.5 e. -14

d. $x^2 - x + 2$

R.

22. If $f(x+1) = x^2 + 3x + 5$, then find f(x). TINSTIN a. $x^2 + 3x + 4$ b. $x^2 + x + 3$ c. $x^2 + 2x + 4$

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a.
$$6x$$

b. $6(x-1)$
c. $3(x-1)$
d. $3xn$

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by 5 units, which expression gives the resulting increase in area? a. 15x + 3028. The length of a rectangular pen is one more than twice its width. If both dimensions are increased stitute ## # 3 Astitute the the

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b. 16x + 30c. $2x^2 + 11x + 30$ d. $2x^2 + 15x + 30$ e. $2x^2 + 16x + 30$

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a. 34 c. -12 d. 12

e. none of these

30. Let a * b be a binary operation defined on the integers by a * b = b - 2. Under what conditions on integers a, b, and c is * associative?

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a. a * b = 2b. *a* or *b* or *c* is 2 c. *a* or *b* or *c* is zero d. $a = b = c + x^{*}$

e. The operation * is never associative

- 31. Thirty-one books are arranged from left to right in order of increasing prices. The price of each book differs by \$2.00 from that of each adjacent book. For the price of the book at the extreme 加斯林婆院 matitule ## # 'S PE right, a customer can buy the middle book and an adjacent one. Then Astitute ##
 - The cheapest book sells for \$4.00. a.
 - b. The middle book sells for \$36.00.
 - The most expensive book sells for \$64.00. c.
 - The adjacent book referred to is the one to the right of the middle book. d.

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e. None of the statements above is true.

32. If a > b, then |a - b| + |b - a| is equal to what expression?

0 a.

b. 2a 2a+2bc. 2b

2a-2b

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Lue d later? 33. The display on a digital clock reads 6:38. What will the clock display twenty-seven digit changes matilite # # 3 multilite # # 3 matinte # # itute ##

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W W. B. W. 加斯林塔像 加频林 塔幣 加斯林塔梯 加斯林道際 34. On each day of its life a scroboscopus squares its number of legs. For example, if a scroboscopus had two legs on the first day of its life, it would have 4 legs on the second day of its life, 16 legs on the third day of its life, and so on. Tom bought some newborn scroboscopi from the pet store. Some had 2 legs to start with, some had 3 legs, and some had 5 legs. Before they have a chance count came out as 164. The day after that the total number of legs increased to 1976. How many scroboscopi did Tom buy altogether? to increase their number of legs, the total leg count came out to 58 legs. The next day the total leg

matine # # *

- 15 a.
- 16 b. c. 21 tinstitute #### d.
 - 30、前期的新林等院 e.
 - 35. During the Christmas season, many postal workers have to work overtime, so a supervisor at one large post office planned a late-night snack for the employees. She ordered 1 extra large pizza for every two workers, 1 large bag of potato chips for every three workers, and 1 two-liter bottle of cola for every four workers. When the order arrived, 26 items were delivered. How many employees were working that evening?
 - 6 a.
 - b. 12
 - c. 24

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astitute ## # B PR INTIMUE STATE IS PE matitule ## # '& R multitle ## # B 24 d. 36 e 36. If x and y are positive numbers and the average of 4, 20, and x is equal to average of y and 16, then the ratio x:y is Institute # # '& R mythute ## # '& R Autitute ## # 13 PR maritule ## # '& PS 加限频料谱网

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5:2 e.

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37. In a dice game, a player rolls two dice. His score is the larger of the two numbers on the dice. probability that his score is 3 or less? For example, if he rolls 3 and 5, his score is 5, and if he rolls 4 and 4, his score is 4. What is the n. matine # 3 mysitute ## # a. $\frac{1}{4}$

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- . 30 b. 29 c. 29 mistille ###

 - d. 27
 - e. 26

39. If $f(2x) = \frac{2}{2+x}$ for all x > 0, then 2f(x) =a. $\frac{2}{1+x}$

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b. $\frac{2}{2+x}$ c. $\frac{4}{1+x}$ d. $\frac{4}{2+x}$

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b. 7<u>36</u>

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c. $\frac{5}{36}$ d. $\frac{1}{3}$

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 $\frac{2+x}{8}$ 40. How many ordered pairs (m,n) of positive integers are solutions to $\frac{4}{m} + \frac{2}{n} = 1$? Institute ## # '\$ 1% Institute ## # 18 18

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