





mutilite # # " Institute # \*\* \* multilite # # \* multilite # # \* multille # # " multille m H 3 Which of the following is the positive solution to the equation  $x - \frac{a^2}{x+2} = 0$  where *a* is any nonzero real number? N. 19. nonzero real number? e)  $-1 + \sqrt{1 + a^2}$ c)  $\sqrt{a^2 - 2}$ d)  $a - \sqrt{2}$ b) *a* 山北 教 法 "这 死 IN THE WE BER R If it takes 2 people 6 hours to wash 15 cars, how many cars can 9 people wash in 4 hours, 20. assuming each car takes the same amount of time to wash? d) 45 % 加的苏林、资料 c)  $42\frac{2}{9}$ a) 30 Ro b) 5 % e) none of these stitute the Let *a* be the length of a square's diagonal. Find the perimeter of that square in terms of *a*. 21. e)  $2\sqrt{2} a$ d)  $\frac{1}{2}\dot{a}^2$ 而时间很新祥谱像 b)  $2\sqrt{2a}$ a)  $4\sqrt{2} a$ R Suppose you were given 1 penny on the first day, 2 pennies on the second day, 4 pennies on the 22. third day, and so on, for 18 days, and your friend gets \$100 each day for 18 days. Approximately Y. how much more than your friend would you receive? (Hint:  $1 + 2 + 4 + \dots + 2^n = 2^{n+1} - 1$ .) b) \$2,621 c) \$3,443 d) \$260,343 a) \$821 e) You would get less. 3. If  $\frac{1}{2} + \frac{1}{4} + \frac{1}{8} + \frac{1}{16} + \dots = c$ , then find the sum of  $\frac{1}{10} + \frac{1}{20} + \frac{1}{40} + \frac{1}{80} + \dots$ . a) 5c b)  $c^2$  c)  $c^5$  d)  $\frac{c}{5}$  e) none cN. e) none of these N. 24. In 1993, Mary was twice Ben's age. In 2000, she was 7 years older than Ben. How old is Ben in 2004? a) 18 b) 21 c) 5 d) 14 d) none of these mutute # # B 而时间推动林塔路 mutute # # B Institute # # '& PR Withte # # 13 PR Astitute # # # 18 Y. to the the B to the the the to the the By the to the the the the to the the By the Ro \*\* 标林 洛

25. Simplify 
$$(\sqrt{x} - \sqrt{3})(\sqrt{x} + \sqrt{3}) - (\sqrt{x} - \sqrt{2})^2$$
  
a) -1 b) $\sqrt{2x} - 5$  c)  $\sqrt{2x-5}$  d)  $2\sqrt{2x} - 5$  c)  $2x + 2\sqrt{2x} - 5$   
26. A bank robber leaves town riding his horse at 16 mph. The sheriff pursues him 15 minutes later at 20 mph. How long does it take the sheriff to overtake and eatch the robber?  
a) 60 min b) 75 min c) 80 min d) 180 min e) 240 min.  
27. Find the point of intersection between the functions,  $f(x) = 11-2x$  and  $g(x) = x^2 - 4$  that is farthest from the origin.  
a)  $(2,7)$  b)  $(3,5)$  c)  $(-5,21)$  d)  $(5\frac{1}{2},26\frac{1}{4})$  e)  $(2,-2)$   
28. If  $x^2 - 8 > -2x$ , then the solution set of x is:  
a)  $\{x|x<-4\}$  b)  $\{x|x>2\}$  c)  $\{x|(x<-4) \text{ or } (x>2)\}$   
d)  $\{x|x>-4\}$  e)  $\{x|=4 < x < 2\}$   
29. Solve for  $x$ :  $x^{-2} + (a+b)x^{-1} + ab = 0$   
a)  $x = a$ ,  $x = b$  b)  $x = a$ ,  $x = -b$  c)  $x = 1/a$ ,  $x = 1/b$   
d)  $x = -1/a$ ,  $x = -1/b$  e) none of these  
30. Which of the following statements about  $f(x+y)$  is always true?  
a)  $f(x+y) = f(x) + f(y)$   
b)  $f(x+y) = f(x) + f(y)$   
c)  $f(x+y) = f(x) + f(y)$   
c)  $f(x+y) = f(x) + f(y)$  is always true?  
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multille m # 3 multille m # " Institute mark " multille m # 3 Institute \$5 th 'S multille m # " 32. Approximately how high was a ball kicked if it had a parabolic path was 2 Y. [1]32<sup>[1] 浙 秋 浅 %</sup> Approximately how high was a ball kicked if it had a parabolic path, was 2 meters above the ground at a point 3 meters from the kicker, and landed 42 meters from the kicker? a) 3.77 meters b) 7.54 meters c) 14 meters 0.0 d) 15.08 meters e) 28 meters matina # # 3 PE Solve for x:  $64^x = 8^3$  with the form  $4x^2$ Ro 33. b) 1.5% a) 2 % d)  $\frac{\log_2(3)}{8}$  e) 9 % mythill # # B R Given the base 5 numbering system with digits 0, 1, 2, 3, and 4, what is 322 + 341 + 401? 34. b) 2314 d) 2114 而如此他教林後然 e) 1414 c) 3224 Y. a) 2144 Duck weed is a fast growing aquatic plant. In 4 days it doubles the amount of surface area it 35. Y. covers. If there was enough duck weed on June 1 to cover 5 cm<sup>2</sup>, approximately how much of the area was covered on June 30? a)  $38 \text{ cm}^2$  b)  $641 \text{ cm}^2$  c)  $761 \text{ cm}^2$  b)  $905 \text{ cm}^2$  e)  $960 \text{ cm}^2$ 36. If the ratio of the legs of a right triangle is 4/3, and the hypotenuse is 25 cm, what is the area of the triangle? a)  $625 \sqrt{2}$  cm<sup>2</sup> b)  $44\frac{4}{9}$  cm<sup>2</sup> c)  $25\sqrt{2}$  cm<sup>2</sup> Ro 而如此他就林塔路 motilite # # '3 % e) 150 cm<sup>2</sup> 面的机能称林塔张 而此此此教授学家 d)  $300 \text{ cm}^2$ , 300 R 小学生 to the We the \*\*\*\*\*\*\*\*\*\* to the the the to the the B Ph to the the B the Ro

