Algebra & Functions Answers & Explanations

1. Choice A is correct.

   You combined like terms and then you divide.

   $4a+1=64$

   $4a=63$

   $a=15.75$

2. Choice A is correct

   $2(½) (b+1) =4$

   $1(b+3)=4$

   $b+3=4 » b=4-3=1$

3. Choice D is correct

   Factor $6b^2-24b+24=6(b^2-4b+4)$

   $6(b-2)^2$

4. Choice D is correct

   $4x + 5x$

   $-4x -4x$

   $9x$

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5. Choice A is correct

$$X + 20\% \cdot x = x + 0.2x = 1.2x$$

6. Choice (C) is correct. If then cannot be If were then would equal not

7. Choice (B) is correct. Let and represent the number of frogs, cats, and fish, respectively. The number of frogs is more than the number of cats, so The number of fish is times the number of frogs, so It is now possible to express the total number of pets, as a single variable. Substituting for in the equation gives Therefore, The total number of pets could be because if then That is, if the number of cats is then the total number of pets will be

8) Choice A is correct. The correct answer is . Expanding both sides of gives Subtracting and from each side of this equation gives and then adding to each side gives Therefore,

9. $5'\sqrt{} x + 14 = 29$

$5'\sqrt{} x = 15$

$'\sqrt{} x = 3$

$'\sqrt{} x = 9$

9) Choice D is correct. If s students and divided among g groups, there will, on average, be g/s students in each group.

11) Choice C is correct. The correct answer is 112. If A represents the number of adult's tickets bought and C represents the number of children's tickets bought, then A+C=160 Since each adult's ticket cost $6 and each children's ticket cost $3 and the total cost of the tickets was $816 it follows that 6a+3c=816. The first equation is equivalent to 3a+3c=480 and when this equation is subtracted from the equation 6a+3c=186 the result is 3a=336, so Therefore, a=112, so 112 adult's tickets were bought.

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12) Choice (B) is correct. If $r \lozenge s = 0$ then by the definition of $r \lozenge s$ it must be true that $rs+s=0$ Since $rs+s=(r+1)s$ it follows that $(r+1)s=0$. This means that at least one of $r+1$ and s must be equal to 0. Since s does not equal 0 it must be true that $r+1=0$ and $r=-1$.

13) The correct answer is 5.5. Since each cell in the colony splits into two cells every 30 minutes, 2 every 30 minutes multiply the number of cells. Therefore, after 1 of these 30-minute periods, the colony will contain Your browser may not support display of this image.cells; after 2 of these periods, the colony will contain 2^2cells; and so on, until after 11 of these 30-minute periods, the colony will contain 2 to the 11 power cells.

14) Choice (A) is correct. Luis earns w dollars an hour for 3x hours, so he earns $w(3x)=3xw$ dollars. He then earns y dollars an hour for x more hours, or xy dollars. In total, therefore, he earns $3xw+xy$ dollars. This is equivalent to $x(3w+y)$ dollars.

15) Choice (C) is correct. If $X-7=2Y$and $X=5+3Y$ then substituting $5+3Y$ for X in the first equation gives $(5+3Y)-7-=2Y$. This equation can be simplified to $3Y-2=2Y$ and further to $Y=2$.

16) Choice (D) is correct. Since $e+f=-1$ it follows that $(e+f)^2=(-1)^2=1$.

17) The correct answer is 2. If$2px3p= 2/5x3/5$, then $6p^2= 6/25$ From this, it follows that $p^2= 1/25$ Since $p>0$ the value of p must be $1/5$The decimal form .2 may also be gridded as the answer.

18) $x^2-16>0 \sim> x^2 >16$. there fore, $x<-4$ or $x>4$ when $x^2$is greater then 16

19) The correct is B.

You combine the two values then divide.