

(61) 1. Prime numbers: 2, 3, 5, 7, 11, 13, 17, 19, 23, 29, 31, 37, 41, 43, 47, 53, 59, 61.

(3) 2. A. {1,2}, {1,3}, {1,5}, {2,3}, {2,5}, {3,5}. $\underline{A=6}$ C. {1,2,3,5}. $\underline{C=1}$
B. {1,2,3}, {1,2,5}, {1,3,5}, {2,3,5}. $\underline{B=4}$ $6-4+1=3$.

(0) 3. $P=0$ (the first whole number is zero). $0/S=0$.

(8) 4. $q+d=32$ (multiply this equation by -10 to receive the third written equation.)
 $25q+10d=680$ (change values to cents.)
 $+ -10q + -10d = -320$
 $15q = 360$. $q=24$. $d=32-24=8$.

(9) 5. A. $4x-6(0)=16$. $x=4$. $\underline{A=4}$ B. $4(0)-6y=16$. $y=-8/3$. $\underline{B=-8/3}$
C. $-6y=-4x+16$. $y=(2/3)x-8/3$. $\underline{C=2/3}$ D. $4x-6(2)=16$. $4x-12=16 \Rightarrow x=7$. $\underline{D=7}$
 $4 - 8/3 + 2/3 + 7 = 9$.

(298) 6. $2^2, 3^2, 4^2, 5^2, 6^2, 7^2, 8^2$. The sum of the last three terms, $x/2$, is 199. $x=298$.

(7) 7. $7x/x^3 = 7x^{-1}$

(37) 8. $S \cap P = \{7,9\}$. $\{7,9\} - R = \{7,9\}$. $Q \cup \{7,9\} = Q$. $3+4+6+7+8+9=37$

$(x-3y+19=0$ 9. Slope(perp). $=(6-3)/(7-10)=-3$. Slope(U) $=-(1/(-3))=1/3$. $(5,8) \Rightarrow$
or $x-3y=-19$) $8=5/3+b \Rightarrow b=19/3$. $y=x/3+19/3$. $3y=x+19 \Rightarrow \underline{x-3y+19=0}$.

(5) 10. $h(-1)=2(-1)^2+3(-1)+6=5$. $g(5)=-4(5)+5=-15$. $f(-15)=-15+14=-1$. $h(-1)=5$.

(2.04) 11. Rate_C $=1/(5.5)$. Rate_D $=1/(3.25)$. Work $=(R_C)(T)+(R_D)(T)=1$.
 $T/(5.5)+T/(3.25)=1$. Mult. by $(5.5 \cdot 3.25)$ $3.25T+5.5T=17.875 \Rightarrow T \approx 2.04$.

(110) 12. $p(2)=2^3+5(2)^2-2k+6=14$. $34-2k=14$; $-2k=-20$; $k=10$.
 $p(4)=4^3+5(4)^2-2(10)+6=110$.

(33-33i) 13. $(12i-10i^2+18-15i)-(15i+25i^2+9+15i)+(i^2-12^2)/11$
 $(12i+10+18-15i)-(15i-25+9+15i)+(1-144)/11$ Simplify: $33-33i$.

(-32) 14. A. Difference of 1, 2, 3, 4, 5, etc. $A=13+5=18$. B. Double. $B=2(64)=128$.
C. Increasing Powers $C=2^5=32$. D. Add previous two numbers $D=8+5=13$.
 $128-32(18-13)=-32$. (P.S. D is called the Fibonacci Sequence!)

(-10/3) 15. $2x-3(4)+17-5(4)/2+4x/3+x^2+2\sqrt{4}=-9$.
 $x^2+10x/3-9=-9$. $x^2+10x/3=0$. Sum is $-b$, or $-10/3$.