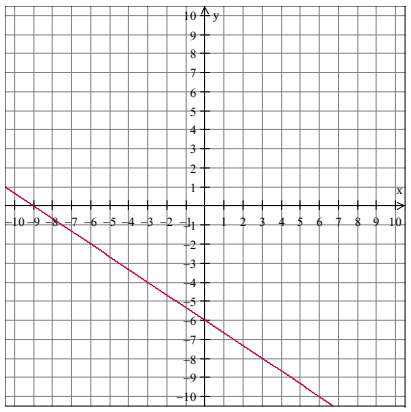
Fayette County Algebra 1 Placement Exam (KEY)

1) $2(2-7)\div[3^2-2+4(-3+1)-4]$ $2(-5)\div[9-2+4(-2)-4]$ $-10\div[9-2-8-4]$ $-10\div[-5]$ 2	2) $-57=3(1+4x)-8x$ $-57=3+12x-8x$ $-60=4x$ $-15=x$
3) $3(x-4)-5x=2(x+4)-15$ $3x-12-5x=2x+8-15$ $-2x-12=2x-7$ $-4x=5$ $x=-\frac{5}{4}$ or -1.25	4) Let x = Ashleigh and x + 2 = Kasey $x+(x+2)=34$ $2x+2=34$ $2x=32$ $x=16$ Ashleigh has \$16 and Kasey has \$18.
5) $4n+25=6n-13$ $-2n=-38$ $n=19$	6) $y=\frac{2}{3}x+2$

7) $2x+3y=-18$

$$y=-\frac{2}{3}x-6$$



8) $m=\dfrac{-4--7}{3--5}$

$m=\dfrac{3}{8}$

9) $y-9=-\dfrac{3}{2}(x--4)$

$y=-\dfrac{3}{2}x-6+9$

$y=-\dfrac{3}{2}x+3$

10) $\begin{cases}4x+3y=-7\\-6x-5y=9\end{cases}\xrightarrow[x2]{x3}\begin{cases}12x+9y=-21\\-12x-10y=18\end{cases}$

$-y=-3\rightarrow y=3$

$4x+3(3)=-7$

$4x+9=-7$

$4x=-16$

$x=-4$

$(-4,3)$

11) Let a = adult and s = student

$\begin{cases}12.5a+9s=1522\\a+s=145\end{cases}\rightarrow s=145-a$

$12.5a+9(145-a)=1522$

$12.5a+1305-9a=1522$

$3.5a=217$

$a=62$

$s=145-62=83$

There were 62 adult tickets and 83 student tickets sold.

12) $-13 < -4x - 5 \le 19$

$-8 < -4x \le 24$

$2 > x \ge -6$

13) $\frac{3y^3}{4z^3}$

14) $(-3x^2 - 5x - 8) - (3x^2 - 4x - 7)$

$-3x^2 - 5x - 8 - 3x^2 + 4x + 7$

$-6x^2 - x - 1$

15) $(3x - 7)(4x + 9)$

$12x^2 + 27x - 28x - 63$

$12x^2 - x - 63$

16) $(5x + 9)(5x - 9)$

17) $(x + 21)(x - 3)$

18) $3(x^2 - 4x - 5)$

$3(x - 5)(x + 1)$

19) $8x^2 + 2x - 3 = 0$

$(2x - 1)(4x + 3) = 0$

$2x - 1 = 0 \rightarrow x = \frac{1}{2}$

$4x + 3 = 0 \rightarrow x = -\frac{3}{4}$

$x = \frac{1}{2}, -\frac{3}{4}$

20) $x^2 - 14x = 51$

$x^2 - 14x - 51 = 0$

$(x - 17)(x + 3) = 0$

$x - 17 = 0 \rightarrow x = 17$

$x + 3 = 0 \rightarrow x = -3$

$x = 17, -3$