

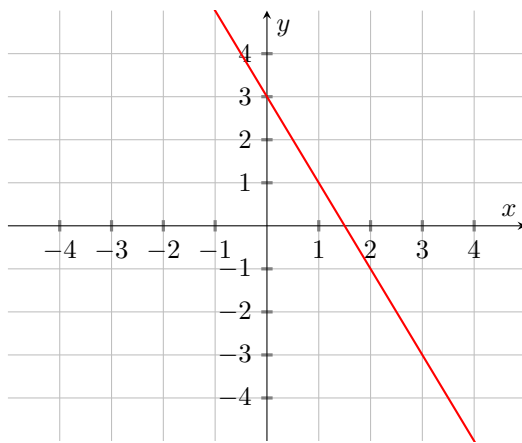
Session 1.1: Where are you in math?

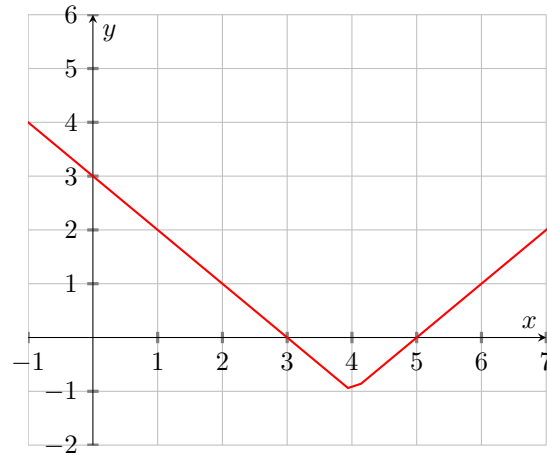
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Solutions1. $x \geq 64$ or must score at least a 64 on the exam

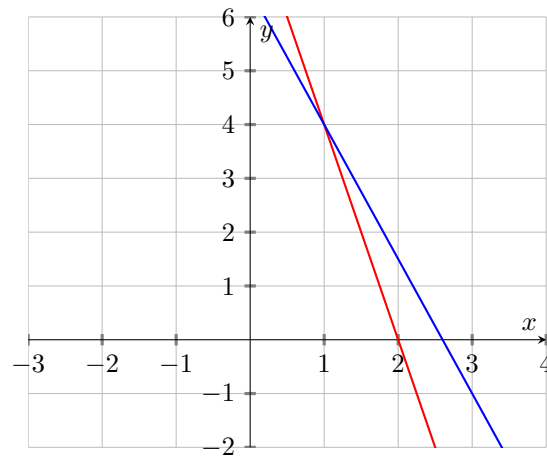
2. $x = -\frac{9}{13}$

3. Given the line $y = -2x + 3$ (a) slope is -2 (b) y-intercept is $(0, 3)$ and some integer points are $(-1, 5)$, $(1, 1)$, $(2, -1)$, $(3, -3)$ 4. slope is $-\frac{1}{3}$ and line is $y = -\frac{1}{3}x + 9$ 5. $x \in [-2, 6]$ or $-2 \leq x \leq 6$ or number line6. Graph $y = |x - 4| - 1$



7. Plot each of these equations on the same graph. *Extra:* find the (x, y) point that satisfies both equations.

$$\begin{cases} 4x + y = 8 \\ 5x + 2y = 13 \end{cases}$$



Intersect at $(1, 4)$

8. 9 games scheduled
9. For each of the following functions, factor them into linear terms, which means they look like $(x-a)(x-b)$ or $(x-a)^2(x-b)$ or $(x-a)^2 + b$ or $(x^2 + ax + b)^2(x-c)$ or anything similar. Find the **(i)** factorization if relevant, **(ii)** x-intercepts, and **(iii)** general shape (quick sketch).
- $f(x) = x^2 - 25 \rightarrow (x - 5)(x + 5)$
 - $f(x) = x^2 + 25 \rightarrow (x - 5i)(x + 5i)$
 - $f(x) = x^2 - 8x - 2 \rightarrow (x - 4)^2 - 18$
 - $f(x) = 8x^2 - 18 \rightarrow 2(2x - 3)(2x + 3)$
 - $f(x) = 4x^2 - 36 + 24 \rightarrow 4(x^2 - 3)$
10. $h = \frac{n(n-1)}{2}$ handshakes in a room with n people