on graph paper: graph the following

1. Sketch Each Line
   - equation: $y = \frac{1}{2}x + 3$
   - graphing the line with the equation $y = \frac{1}{2}x + 3$

2. equation: $y = \frac{1}{2}x + 4$
   - graphing the line with the equation $y = \frac{1}{2}x + 4$

3. equation: $y = -6x - 3$
   - graphing the line with the equation $y = -6x - 3$

4. equation: $y = -5x - 3$
   - graphing the line with the equation $y = -5x - 3$
Sketch Each Line

1. \[ y = \frac{1}{2}x + 3 \]

2. \[ y = \frac{1}{2}x + 4 \]

3. \[ y = -6x - 3 \]

4. \[ y = -5x - 3 \]
2) \( y \leq \frac{3}{5}x - 5 \)

4) \( y > -4 \)

6) \( y \geq \frac{7}{4}x + 2 \)
1) \( y \geq -3x + 4 \)
2) \( y \leq \frac{3}{5}x - 5 \)
3) \( y > -x - 5 \)
4) \( y > -4 \)
5) \( y > 2x - 5 \)
6) \( y \geq \frac{7}{4}x + 2 \)
7) \( x < -5 \)
8) \( y \leq \frac{4}{3}x - 4 \)
9) \( 3x - 2y < 10 \)
10) \( 5x - 3y \leq -15 \)
11) \( y \geq 4 \)
12) \( x - y > 2 \)

Finish practice from yesterday

On graph paper, graph the inequalities
1) \( y \geq -3x + 4 \)

2) \( y \leq \frac{3}{5}x - 5 \)

3) \( y > -x - 5 \)

4) \( y > -4 \)

5) \( y > 2x - 5 \)

6) \( y \geq \frac{7}{4}x + 2 \)
7) \( x < -5 \)

8) \( y \leq \frac{4}{3}x - 4 \)

9) \( 3x - 2y < 10 \)

10) \( 5x - 3y \leq -15 \)

11) \( y \geq 4 \)

12) \( x - y > 2 \)
Check homework - page 320 12-22 (even)
5x + y ≥ 10
-5x
y ≥ 5x + 10

10x + 2y ≤ 14
-10x
y ≤ -10x + 14

2y ≤ -10x + 14
y ≤ -5x + 7
• Read through the entire problem.
• Highlight the important information and key words that you need to solve the problem.
• Identify your variables.
• Write the equation or inequality.
• Solve.
• Write your answer in a complete sentence.
• Check or justify your answer.

Inequality Key Words

• at least - means greater than or equal to
• no more than - means less than or equal to
• more than - means greater than
• less than - means less than
Keith has $500 in a savings account at the beginning of the summer. He wants to have at least $200 in the account by the end of the summer. He withdraws $25 each week for food, clothes, and movie tickets.

- Write an inequality that represents Keith's situation.
- How many weeks can Keith withdraw money from his account?
- Justify your answer.
Step 1: Highlight the important information in this problem.

Note: At least is a key word that notes that this problem must be written as an inequality.

Keith has $500 in a savings account at the beginning of the summer. He wants to have at least $200 in the account by the end of the summer. He withdraws $25 each week for food, clothes, and movie tickets.

- Write an inequality that represents Keith’s situation.
- How many weeks can Keith withdraw money from his account? Justify your answer.
Step 2: Identify your variable. What don’t you know? The question verifies that you don’t know how many weeks.

Let $w =$ the number of weeks
Step 3: Write your inequality.

500 - 25w ≥ 200

I know you are saying, "How did you get that inequality?"

I know the "at least" part is tricky. You would probably think that at least means less than.

But... he wants the amount in his account to be at least $200 which means $200 or greater. So, we must use the greater than or equal to symbol.
Step 4: Solve the inequality.

\[
\begin{align*}
500 - 25w & \geq 200 \\
500 - 500 - 25w & \geq 200 - 500 \\
-25w & \geq -300 \\
-25 & \quad -25 \\
w & \leq 12
\end{align*}
\]

Subtract 500 from both sides.

Divide by -25

Reverse your sign since you divided by a negative number.

The number of weeks that Keith can withdraw money from his account is 12 weeks or less.
The number of weeks that Keith can withdraw money from his account is 12 weeks or 355.

Step 5: Justify (prove your answer mathematically).

I am going to prove that the largest number of weeks is 12 by substituting 12 into the inequality for w. You could also substitute any number less than 12.

\[
500 - 25w > 200 \\
500 - 25(12) > 200 \\
500 - 300 > 200 \\
200 > 200 \smiley
\]

Since 200 is equal to 200, my answer is correct. Any more than 12 weeks and his account balance would be less than $200. Any number of weeks less than 12 and his account would stay above $200.