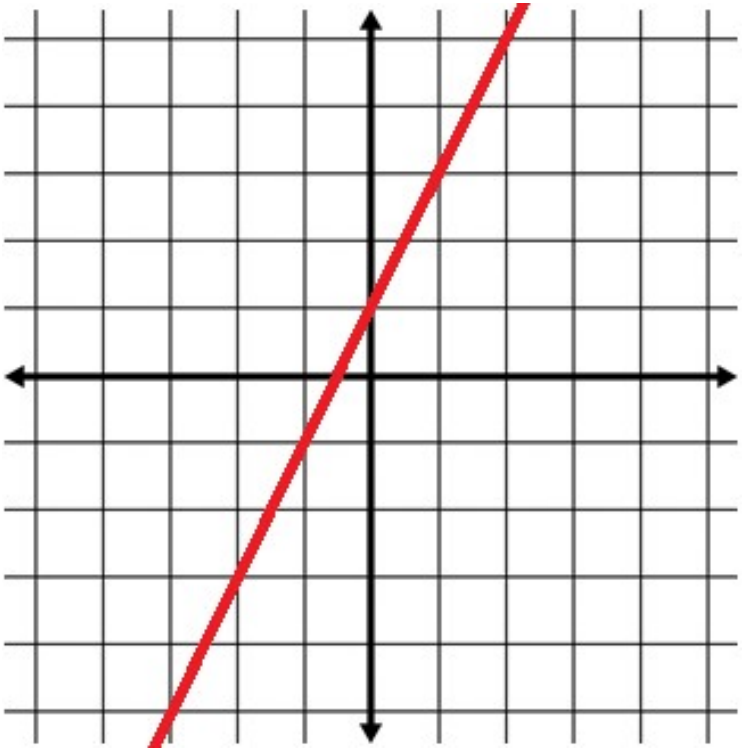
Review

What is the equation?



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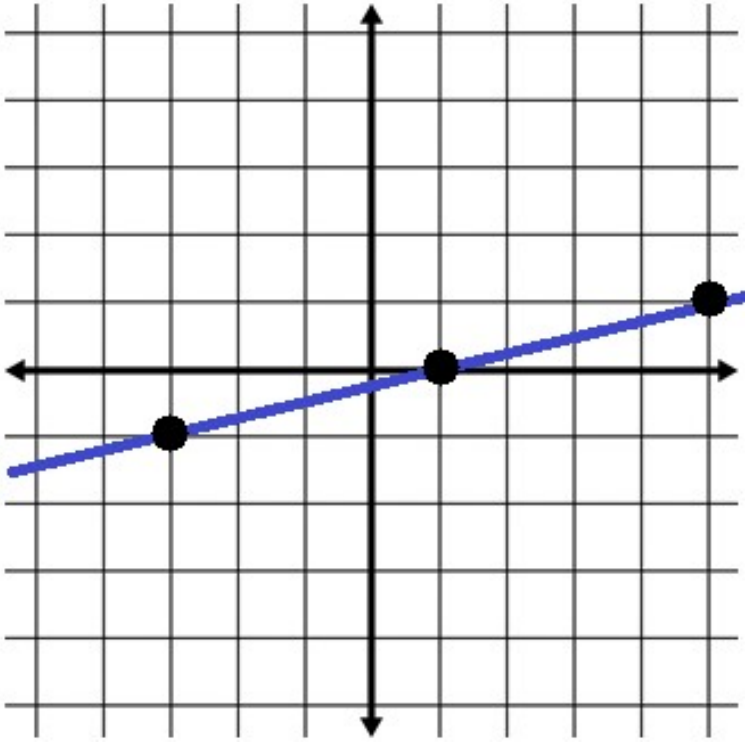

5-5 Standard Form

Content Standards

A.CED.2 Create equations in two or more variables to represent relationships between quantities; graph equations on coordinate axes . . .

Also N.Q.2, A.SSE.2, F.IF.4, F.IF.7.a, F.IF.9, F.BF.1.a, F.LE.2, F.LE.5

I can graph linear equations using intercepts.

I can write linear equations in standard form.

x-intercept – the *x*-coordinate of a point where a graph crosses the *x*-axis.

standard form of a linear equation – $Ax + By = C$, where A, B, and C are real numbers, and A and B are not both zero.

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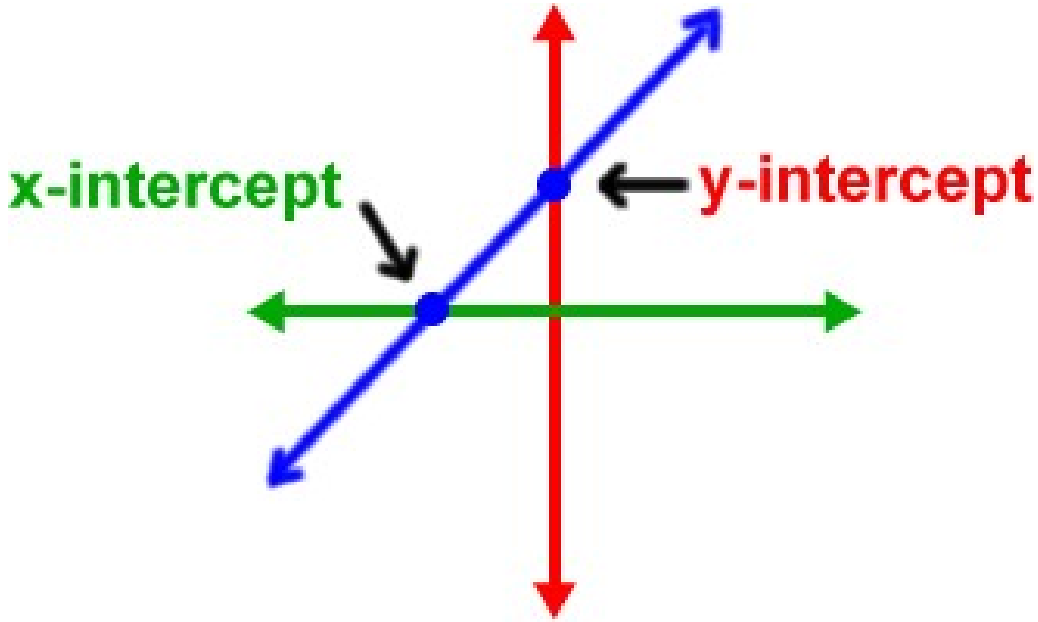
In this lesson, you will learn to use intercepts to graph a line. Recall that a y-intercept is the y-coordinate of a point where a graph crosses the y-axis. The **x-intercept** is the x-coordinate of a point where a graph crosses the x-axis.



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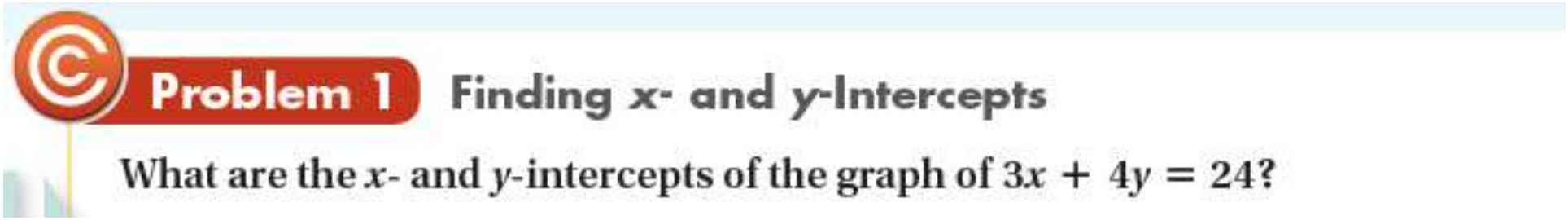

Problem 1 Finding x- and y-Intercepts

What are the x- and y-intercepts of the graph of $3x + 4y = 24$?

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1. What are the x- and y-intercepts of the graph of each equation?

   a. $5x - 6y = 60$

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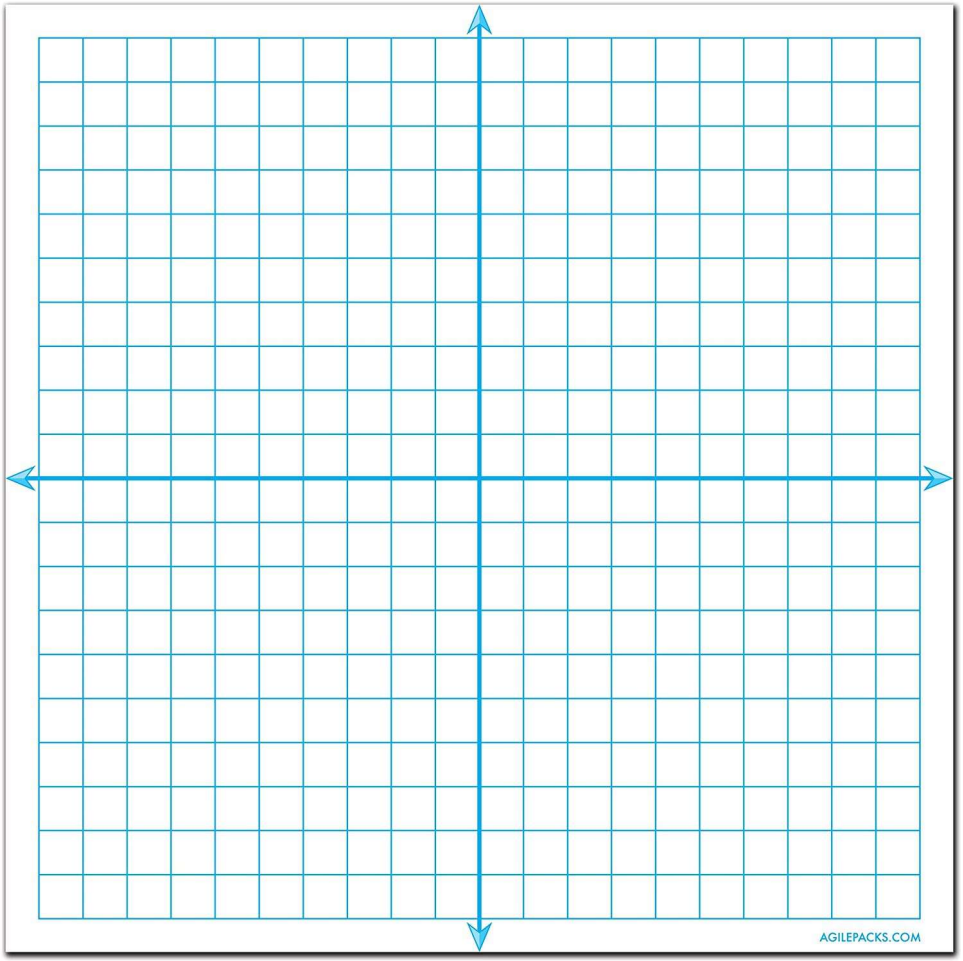
Problem 2 Graphing a Line Using Intercepts

What is the graph of $x - 2y = -2$?



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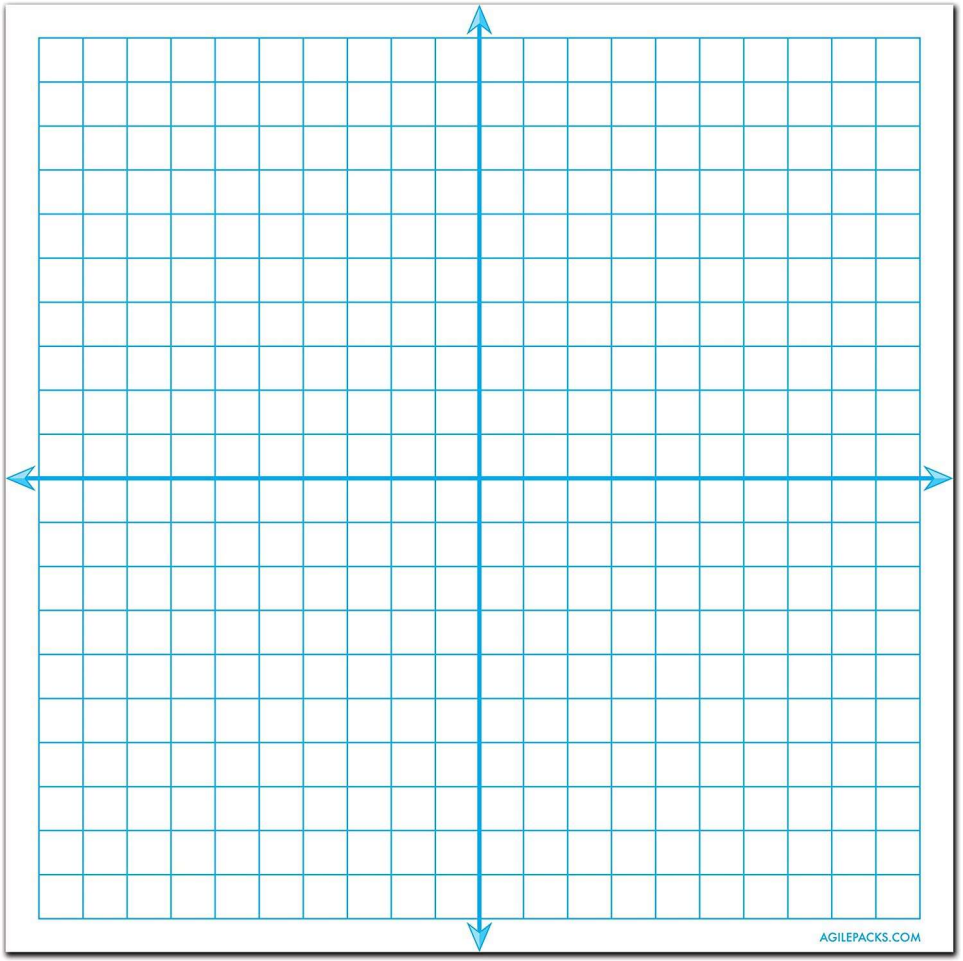
2. What is the graph of $2x + 5y = 20$?



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Problem 3 Graphing Horizontal and Vertical Lines

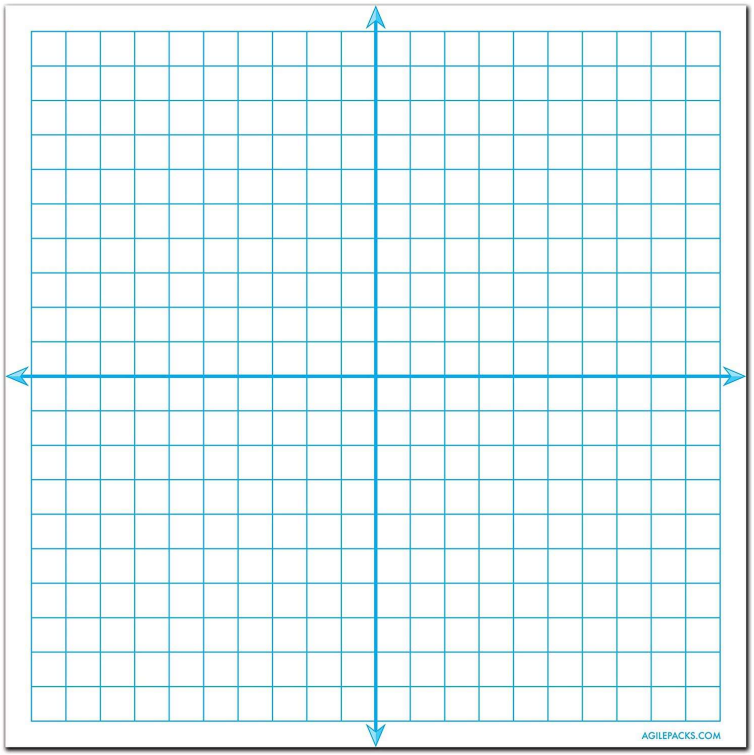
What is the graph of each equation?

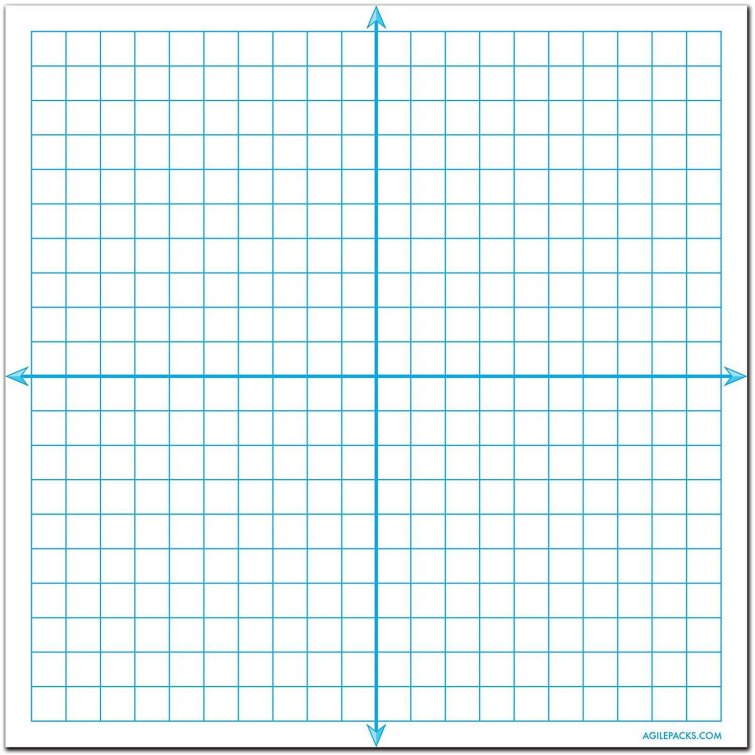
A $x = 3$

$1x + 0y = 3$ ← Write in standard form. →

B $y = 3$

$0x + 1y = 3$





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Problem 4 Transforming to Standard Form

What is $y = -\frac{3}{7}x + 5$ written in standard form using integers?

I can graph linear equations using intercepts.
I can write linear equations in standard form.

4. Write $y - 2 = -\frac{1}{3}(x + 6)$ in standard form using integers.

Lesson Check

Do you know HOW?

1. What are the x- and y-intercepts of the graph of $3x - 4y = 9$?
2. What is the graph of $5x + 4y = 20$?
3. Is the graph of $y = -0.5$ a *horizontal line*, a *vertical line*, or *neither*?
4. What is $y = \frac{1}{2}x + 3$ written in standard form using integers?
5. A store sells gift cards in preset amounts. You can purchase gift cards for \$10 or \$25. You have spent \$285 on gift cards. Write an equation in standard form to represent this situation. What are three combinations of gift cards you could have purchased?

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Lesson Check

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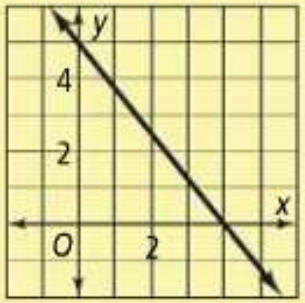
2. 

3. horizontal line
4. $x - 2y = -6$
5. $10x + 25y = 285$; answers may vary. Sample: 1 \$10 card and 11 \$25 cards, 6 \$10 cards and 9 \$25 cards, 11 \$10 cards and 7 \$25 cards