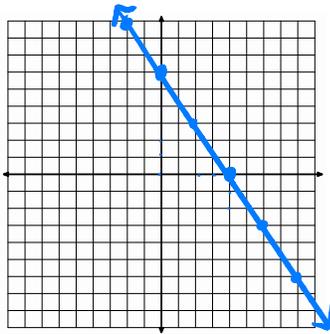### READY

Topic: Graphing lines using the intercepts

Find the x-intercept and the y-intercept. Then graph the equation.

1. $3x + 2y = 12$
    a. x-intercept: $(4,0)$
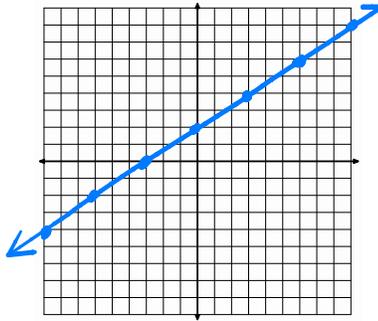   b. y-intercept: $(0,6)$

2. $8x - 12y = -24$
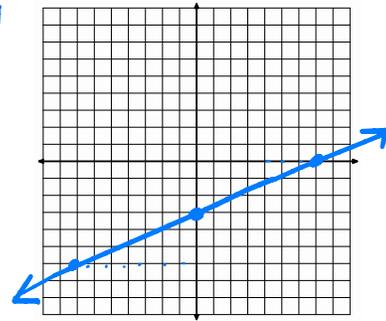   a. x-intercept: $(-3,0)$
    b. y-intercept: $(0,2)$

3. $3x - 7y = 21$
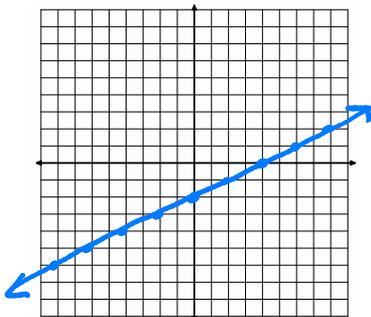   a. x-intercept: $(7,0)$
    b. y-intercept: $(0,-3)$

4. $5x - 10y = 20$
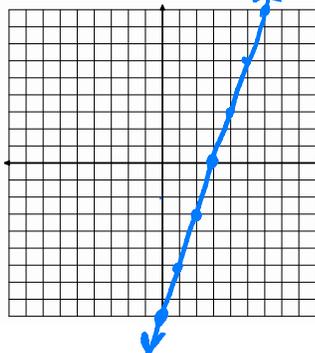   a. x-intercept: $(4,0)$
    b. y-intercept: $(0,-2)$

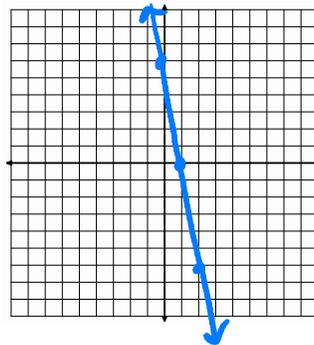5. $2y = 6x - 18$
    $-6x + 2y = -18$
    a. x-intercept: $(3,0)$
    b. y-intercept: $(0,-9)$

6. $y = -6x + 6$
    a. x-intercept: $(1,0)$
    b. y-intercept: $(0,6)$

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Lesson 3

SET

Topic: Completing the square by paying attention to the parts

Multiply. Show each step. Circle the pair of <u>like terms</u> before you simplify to a trinomial.

7. $(x + 5)(x + 5)$ 8. $(3x + 7)(3x + 7)$ 9. $(9x + 1)^2$ 10. $(4x + 11)^2 = (4x+11)(4x+11)$

$x^2 + 10x + 25$ $9x^2 + 42x + 49$ $(9x+1)(9x+1)$ $= 16x^2 + 88x + 121$

$81x^2 + 18x + 1$

11. Write a rule for finding the coefficient "B" of the x-term (the middle term) when multiplying and simplifying $(ax + q)^2$.

$$a^2x^2 + 2axq + q^2$$

In problems 12 – 17,   **(a) Fill in the number that completes the square.**

(b) Then write the trinomial as the product of two factors.

12. a) $x^2 + 8x +$ __16__

   b) $(x+4)(x+4)$

13. a) $x^2 + 10x +$ __25__

   b) $(x+5)(x+5)$

14. a) $x^2 + 16x +$ __64__

   b) $(x+8)(x+8)$

15. a) $x^2 + 6x +$ __9__

   b) $(x+3)(x+3)$

16. a) $x^2 + 22x +$ __121__

   b) $(x+11)(x+11)$

17. a) $x^2 + 18x +$ __81__

   b) $(x+9)(x+9)$

In problems 18 – 26,   **(a) Find the value of "B," that will make a perfect square trinomial.**

(b) Then write the trinomial as a product of two factors.

18. $x^2 + Bx + 16$
   a) $x^2 + 8x + 16$
   b) $(x+4)(x+4)$

19. $x^2 + Bx + 121$
   a) $x^2 + 22x + 121$
   b) $(x+11)(x+11)$

20. $x^2 + Bx + 625$
   a) $x^2 + 50x + 625$
   b) $(x+25)(x+25)$

21. $x^2 + Bx + 225$
   a) $x^2 + 30x + 225$
   b) $(x+15)(x+15)$

22. $x^2 + Bx + 49$
   a) $x^2 + 14x + 49$
   b) $(x+7)(x+7)$

23. $x^2 + Bx + 169$
   a) $x^2 + 26x + 169$
   b) $(x+13)(x+13)$

24. $x^2 + Bx + \frac{25}{4}$
   a) $x^2 + 5x + \frac{25}{4}$
   b) $\left(x+\frac{5}{2}\right)\left(x+\frac{5}{2}\right)$

25. $x^2 + Bx + \frac{9}{4}$
   a) $x^2 + 3x + \frac{9}{4}$
   b) $\left(x+\frac{3}{2}\right)\left(x+\frac{3}{2}\right)$

26. $x^2 + Bx + \frac{49}{4}$
   a) $x^2 + 7x + \frac{49}{4}$
   b) $\left(x+\frac{7}{2}\right)\left(x+\frac{7}{2}\right)$

GO

Topic: Features of horizontal and vertical lines

Find the intercepts of the graph of each equation. State whether it's an x- or y- intercept.

27. y = -4.5

y-int
(0,-4.5)

28. x = 9.5

x-int
(9.5,0)

29. x = -8.2

x-int
(-8.2,0)

30. y = 112

y-int
(0,112)

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