

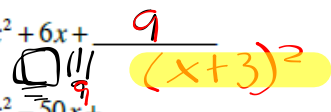
READY, SET, GO!	Name _____	Period _____	Date _____
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READY

Topic: Making perfect square trinomials

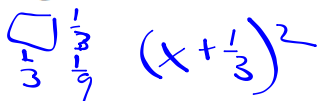
Fill in the number that completes the square. Then write the trinomial in factored form.

1. $x^2 + 6x + \underline{9}$ 2. $x^2 - 14x + \underline{\hspace{2cm}}$
 3. $x^2 - 50x + \underline{\hspace{2cm}}$ 4. $x^2 - 28x + \underline{\hspace{2cm}}$



On the next set, leave the number that completes the square as a fraction. Then write the trinomial in factored form.

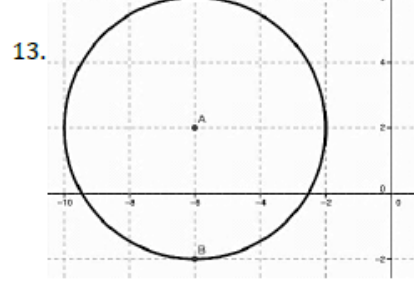
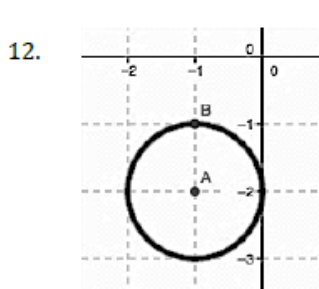
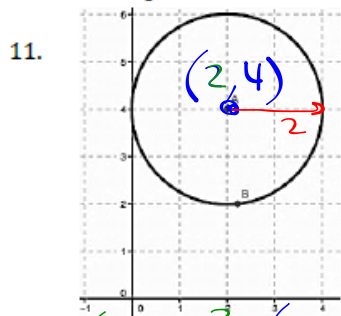
5. $x^2 - 11x + \underline{\hspace{2cm}}$ 6. $x^2 + 7x + \underline{\hspace{2cm}}$ 7. $x^2 + 15x + \underline{\hspace{2cm}}$
 8. $x^2 + \frac{2}{3}x + \underline{\frac{1}{9}}$ 9. $x^2 - \frac{1}{5}x + \underline{\hspace{2cm}}$ 10. $x^2 - \frac{3}{4}x + \underline{\hspace{2cm}}$



SET

Topic: Writing equations of circles with center (h, k) and radius r.

Write the equation of each circle.



$(x-2)^2 + (y-4)^2 = 2^2$

Write the equation of the circle with the given center and radius. Then write it in expanded form.

14. Center: (5, 2) Radius: 13

$$(x-5)^2 + (y-2)^2 = 13^2$$

$$x^2 - 10x + 25 + y^2 - 4y + 4 = 169$$

15. Center: (-6, -10) Radius: 9

16. Center: (0, 8) Radius: 15

17. Center: (19, -13) Radius: 1

18. Center: (-1, 2) Radius: 10

19. Center: (-3, -4) Radius: 8

Go

Topic: Verifying if a point is a solution

Identify which point is a solution to the given equation. Show your work.

20. $y = \frac{4}{5}x - 2$

Test
 a. (-15, -14)
 $-14 = \frac{4}{5}(-15) - 2$?

b. (10, 10)

21. $y = 3|x|$

a. (-4, -12)

b. $(-\sqrt{5}, 3\sqrt{5})$

22. $y = x^2 + 8$

a. $(\sqrt{7}, 15)$

b. $(\sqrt{7}, -1)$

23. $y = -4x^2 + 120$

a. $(5\sqrt{3}, -180)$

b. $(5\sqrt{3}, 40)$

24. $x^2 + y^2 = 9$

a. (8, -1)

b. $(-2, \sqrt{5})$

25. $4x^2 - y^2 = 16$

a. $(-3, \sqrt{10})$

b. $(-2\sqrt{2}, 4)$

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READY

Topic: Finding the distance between two points

Simplify. Use the distance formula $d = \sqrt{(x_2 - x_1)^2 + (y_2 - y_1)^2}$ to find the distance between the given points. Leave your answer in simplest radical form.

1. $A(18, -12) B(10, 4)$ 2. $G(-11, -9) H(-3, 7)$ 3. $J(14, -20) K(5, 5)$
4. $M(1, 3) P(-2, 7)$ 5. $Q(8, 2) R(3, 7)$
6. $S(-11, 2\sqrt{2}) T(-5, -4\sqrt{2})$ 7. $W(-12, -2\sqrt{2}) Z(-7, -3\sqrt{2})$

SET

Topic: Writing equations of circles

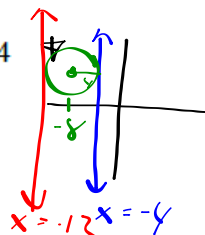
Use the information provided to write the equation of the circle in standard form,

$$(x - h)^2 + (y - k)^2 = r^2$$

8. Center $(-16, -5)$ and the circumference is $22\pi \rightarrow C = 2\pi r$
 $22\pi = 2\pi r$
9. Center $(13, -27)$ and the area is 196π
10. Diameter measures 15 units and the center is at the intersection of $y = x + 7$ and $y = 2x - 5$

11. Lies in quadrant 2 Tangent to $x = -12$ and $x = -4$

$(x + 8)^2 + (y - 4)^2 = 4^2, r = 4$
 $(-8, 4) \quad r = 4$



12. Center $(-14, 9)$ Point on circle $(1, 11)$

13. Center lies on the y axis Tangent to $y = -2$ and $y = -17$

14. Three points on the circle are $(-8, 5), (3, -6), (14, 5)$



15. I know three points on the circle are $(-7, 6), (9, 6),$ and $(-4, 13)$. I think that the equation of the circle is $(x-1)^2 + (y-6)^2 = 64$. Is this the correct equation for the circle? Justify your answer.

GO

Topic: Finding the value of B in a quadratic in the form of $Ax^2 + Bx + C$ in order to create a perfect square trinomial.

Find the value of B that will make a perfect square trinomial. Then write the trinomial in factored form.

16. $x^2 + \underline{12}x + 36$ 17. $x^2 + \underline{\quad}x + 100$ 18. $x^2 + \underline{\quad}x + 225$

Handwritten work for problem 16: $x^2 + 12x + 36$ is factored as $(x+6)(x+6)$. The numbers 12 and 36 are circled in red. The factored form $(x+6)(x+6)$ is highlighted in yellow. Below it, $x^2 + 12x + 36$ is written with a checkmark.

19. $(9x^2 + \underline{90}x + 225)$ 20. $16x^2 + \underline{104}x + 169$ 21. $x^2 + \underline{\quad}x + 5$

Handwritten work for problem 19: $(9x^2 + 90x + 225)$ is factored as $(3x+15)(3x+15)$. The numbers 90 and 225 are circled in green. The factored form $(3x+15)(3x+15)$ is written in blue. The numbers 45x and 45x are written in blue between the parentheses.

Handwritten work for problem 20: $(16x^2 + 104x + 169)$ is factored as $(4x+13)(4x+13)$. The numbers 104 and 169 are circled in green. The factored form $(4x+13)(4x+13)$ is written in red. The numbers 52x and 52x are written in green between the parentheses.

22. $x^2 + \underline{5}x + \frac{25}{4}$ 23. $x^2 + \underline{\quad}x + \frac{9}{4}$ 24. $x^2 + \underline{\quad}x + \frac{49}{4}$

Handwritten work for problem 22: $x^2 + 5x + \frac{25}{4}$ is factored as $(x + \frac{5}{2})(x + \frac{5}{2})$. The number 5 is circled in red. The factored form $(x + \frac{5}{2})(x + \frac{5}{2})$ is written in green. Below it, $\frac{5}{2} + \frac{5}{2} = \frac{10}{2} = 5$ is written in red.

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