Lesson 4

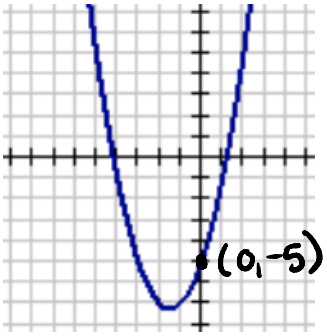
READY, SET, GO! Name Period Date

READY

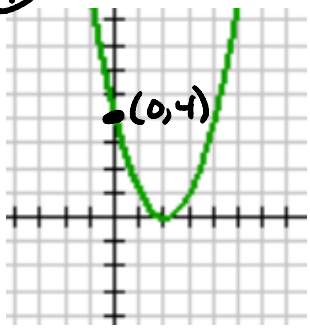
Topic: Find y-intercepts in parabolas

State the y-intercept for each of the graphs. Then match the graph with its equation.

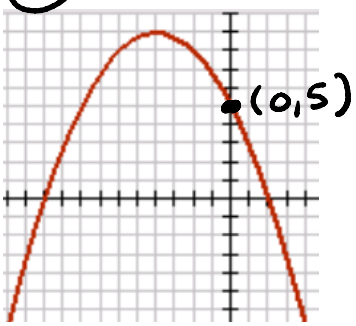
1. (c)



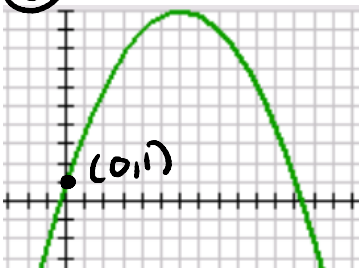
2. (f)



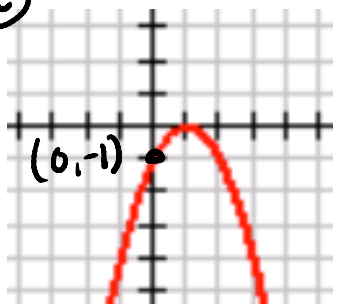
3. (b)



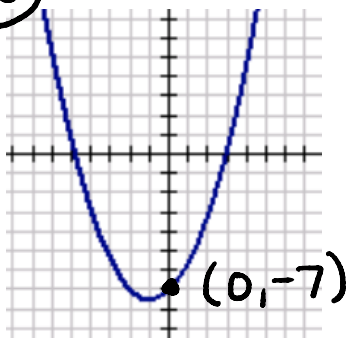
4. (e)



5. (a)



6. (d)



a. $f(x) = -x^2 + 2x - 1$ #5

b. $f(x) = -.25x^2 - 2x + 5$ #3

c. $f(x) = x^2 + 3x - 5$ #1

d. $f(x) = .5x^2 + x - 7$ #6

e. $f(x) = -.25x^2 + 3x + 1$ #4

f. $f(x) = x^2 - 4x + 4$ #2

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SET

Topic: Completing the square when a >1.

Fill in the missing constant so that each expression represents 5 perfect squares. Then state the dimensions of the squares in each problem.

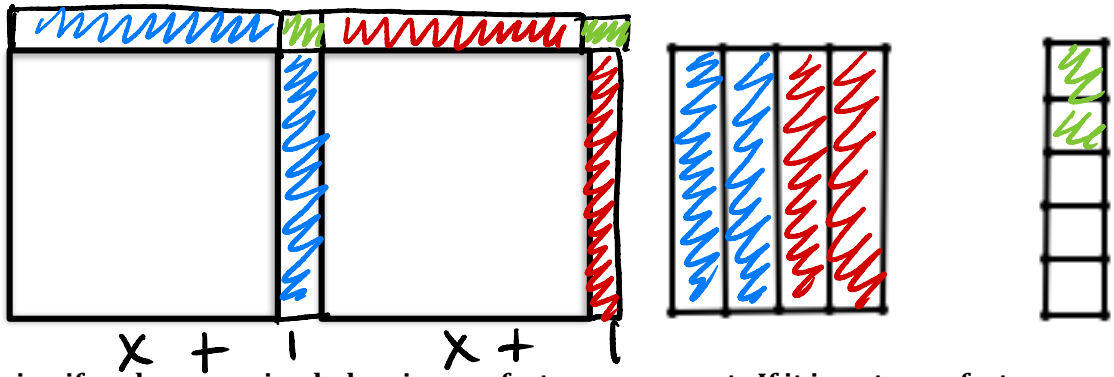
7. $5x^2 + 30x +$ 45
$5(x^2+6x+9)$
$5(x+3)^2$

8. $5x^2 - 50x +$ 125
$5(x^2-10x+25)$
$5(x-5)^2$

9. $5x^2 + 10x +$ 5
$5(x^2+2x+1)$
$5(x+1)^2$

10. Given the scrambled diagram below, write two equivalent equations for the area.

$2x^2+4x+5 = 2(x+1)^2+3$



Determine if each expression below is a perfect square or not. If it is not a perfect square, find the perfect square that seems "closest" to the given expression and show how the perfect square can be adjusted to be the given expression.

11. $A(x) = x^2 + 10x + 14$
$= (x^2+10x+25)+14-25$
$= (x+5)^2 - 11$

12. $A(x) = 2x^2 + 16x + 6$
$= (2x^2+16x+32)+6-32$
$= 2(x^2+8x+16)-26$
$= 2(x+4)^2-26$

13. $A(x) = 3x^2 + 18x - 12$
$= (3x^2+18x+27)-12-27$
$= 3(x^2+6x+9)-39$
$= 3(x+3)^2-39$

GO

Topic: Evaluating functions.

Find the indicated function value when $f(x) = 4x^2 - 3x - 25$ *and* $g(x) = -2x^2 + x - 5$.

14. $f(1)$
$4(1)^2-3(1)-25$
$4-3-25$
-28

15. $f(5)$
$4(5)^2-3(5)-25$
$100-15-25$
60

16. $g(10)$
$-2(10)^2+10-5$
$-200+10-5$
-195

17. $g(-5)$
$-2(-5)^2+(-5)-5$
$-50-5-5$
-60

18. $f(0) + g(0)$
$-25 + -5$
-30