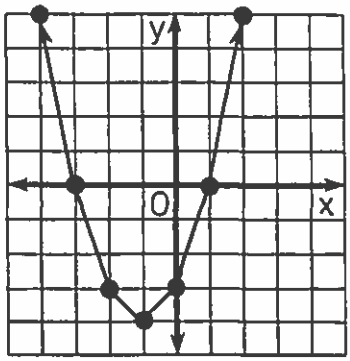
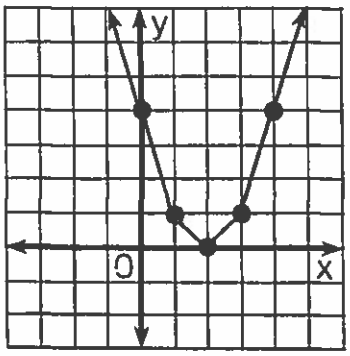
Name: _____

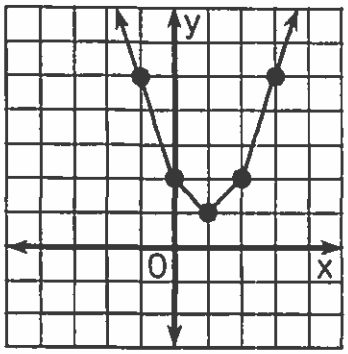
Discriminant: Write each problem in a separate box below. Show your work for the 4 problems online here. http://bit.ly/2Bd0zNG

How Can You Help Control Soil Erosion?

Use the related graph or the discriminant of each equation to determine how many real-number solutions it has. Circle the letter of the correct choice and write this letter in the box containing the exercise number.







(1) $x^2 + 2x - 3 = 0$
(D) two solutions
(E) one solution
(M) no solutions

(2) $x^2 - 4x + 4 = 0$
(C) two solutions
(A) one solution
(W) no solutions

(3) $x^2 - 2x + 2 = 0$
(H) two solutions
(D) one solution
(O) no solutions

	two solutions	one solution	no solutions
(4) $x^2 + 5x + 4 = 0$	K	B	G
(5) $x^2 - 3x = 2$	U	O	A
(6) $y^2 + 10y + 25 = 0$	V	A	I
(7) $2x^2 = 4x - 3$	F	C	H
(8) $4x^2 + 9 = 12x$	S	P	N
(9) $-3n^2 + 5n - 2 = 0$	N	R	S
(10) $\frac{1}{2}x^2 + 3x + 8 = 0$	R	P	L
(11) $\frac{1}{3}t^2 + 3 = 2t$	Y	B	T

7	3	10	1	5	8	2	11	6	9	4

OBJECTIVE 4–f: To use the related graph or the discriminant of a equation to determine how many real-number solutions it has.

Moving Words

Solve each equation in the top block and find the solution set in the bottom block. (One equation has no solution.) Transfer the word from the top box to the corresponding bottom box.

(1) $x^2 = 81$ TO	(6) $y^2 - 49 = 0$ MAKE	(11) $4x^2 - 200 = -20$ THE	(16) $(x - 2)^2 = 28$ STUDENTS
(2) $a^2 = 20$ WAS	(7) $x^2 - 16 = 8$ ONCE	(12) $7y^2 + 18 = 4$ THERE	(17) $3(x - 5)^2 = 12$ TEACHER
(3) $3n^2 = 45$ IN	(8) $b^2 + 11 = 86$ TEN	(13) $(x - 1)^2 = 9$ LAUGH	(18) $5(n + 1)^2 = 40$ TEN
(4) $7x^2 = 84$ WHO	(9) $2x^2 - 3 = 15$ NO	(14) $(a + 3)^2 = 25$ TOLD	(19) $(2x - 3)^2 = 81$ JOKES
(5) $2v^2 = 180$ BUT	(10) $5w^2 + 8 = 58$ A	(15) $(t - 4)^2 = 7$ DID	(20) $(4t + 1)^2 = 49$ PUN

no solution	$\{\pm 2\sqrt{6}\}$	$\{\pm 2\sqrt{5}\}$	$\{\pm \sqrt{10}\}$	$\{7, 3\}$
$\{\pm 2\sqrt{3}\}$	$\{2, -8\}$	$\{\pm 5\sqrt{3}\}$	$\{6, -3\}$	$\{\pm 9\}$
$\{\pm 7\}$	$\{\pm 2\sqrt{3}\}$	$\{2 \pm 2\sqrt{7}\}$	$\{4, -2\}$	$\{\pm 3\sqrt{10}\}$
$\{\pm 3\}$	$\{\frac{3}{2}, -2\}$	$\{\pm\sqrt{15}\}$	$\{-1 \pm 2\sqrt{2}\}$	$\{4 \pm \sqrt{7}\}$

What Do You Call It When Somebody Spends 20 Years in the 24th Row of a Theater?

Solve each equation below using the quadratic formula. Find the solution set at the bottom of the page and print the letter of the exercise above it.

(I) $2x^2 - 7x + 5 = 0$

(N) $2x^2 + x - 6 = 0$

(S) $3n^2 - 2n - 5 = 0$

(A) $w^2 + 7w + 4 = 0$

(I) $5x^2 + 3x - 3 = 0$

(G) $6x^2 - x = 2$

(E) $2y^2 + 2 = 9y$

(I) $x^2 - 6x + 4 = 0$

(L) $t^2 + 4t - 2 = 0$

(N) $3x^2 + 10x + 5 = 0$

(V) $4x^2 - 3x = 1$

(L) $2d^2 + 4 = 5d$

(X) $2x = 7 - x^2$

(I) $y^2 + 9 = -9y$

$\{-2 \pm \sqrt{6}\}$	$\left\{\frac{-3 \pm \sqrt{69}}{10}\right\}$	$\left\{1, -\frac{1}{4}\right\}$	$\{3 \pm \sqrt{5}\}$	$\left\{\frac{3}{2}, -2\right\}$	$\left\{\frac{2}{3}, -\frac{1}{2}\right\}$	$\{-1 \pm 3\sqrt{5}\}$	$\left\{\frac{5}{2}, 1\right\}$	$\left\{\frac{-5 \pm \sqrt{10}}{3}\right\}$	$\left\{\frac{-9 \pm \sqrt{30}}{2}\right\}$	$\{-1 \pm 2\sqrt{2}\}$	$\left\{2, -\frac{3}{2}\right\}$	$\left\{\frac{-7 \pm \sqrt{33}}{2}\right\}$	$\left\{\frac{-9 \pm 3\sqrt{5}}{2}\right\}$	$\left\{\frac{5}{3}, -1\right\}$	no solution	$\left\{\frac{9 \pm \sqrt{65}}{4}\right\}$