Algebra 2
Review for Unit 3 Quiz #2

Simplify.

1. $5\sqrt{-32}$

$20i\sqrt{2}$

2. $\sqrt{-16}+\sqrt{-81}$

$4i+9i$

$13i$

Simplify. Write the answer in standard form.

3. $(9-7i)-(4+5i)$

$5-12i$

4. $(5-2i)^2$

$25-20i+4i^2$

$21-20i$

5. $\frac{4}{2-i}$ $\quad 2+i$ $\quad 2+i$

$\frac{8+4i}{5} = \frac{8}{5}+\frac{4}{5}i$

Solve by factoring.

6. $x^2 - 40 = 3x$

$x^2-3x-40=0$

$(x-8)(x+5)=0$

$8, -5$

7. $x^2 - 81 = 0$

$-9, 9$

8. $3x^2 + 4x = 4$

$3x^2+4x-4=0$

$(3x-2)(x+2)=0$

$2/3, -2$

Solve by square root method.

9. $x^2 - 1 = 19$

$\pm 2\sqrt{5}$

10. $2x^2 + 21 = 7$

$x^2=-7$

$x=\pm i\sqrt{7}$

11. $(x - 3)^2 + 4 = 10$

$3\pm\sqrt{6}$

Solve by quadratic formula.

12. $x^2 + 4x + 1 = 0$

$\frac{-4\pm\sqrt{16-4(1)(1)}}{2}$

$\frac{-4\pm 2\sqrt{3}}{2} = -2\pm\sqrt{3}$

13. $2x^2 - 2x + 5 = 0$

$\frac{2\pm\sqrt{4-4(2)(5)}}{4}$

$\frac{2\pm i\sqrt{39}}{4}$

Match which method would be best for each quadratic equation then solve. You may only use each method once.

a. factoring
b. square root
c. quadratic formula

14. $2x^2 + 9 = 33$

b

$x^2 = 12$

$x = \pm 2\sqrt{3}$

15. $x^2 = 5 - 4x$

a

$x^2 + 4x - 5 = 0$

$(x+5)(x-1) = 0$

$x = -5, 1$

16. $x^2 + 2 = 5x$

c

$x^2 - 5x + 2 = 0$

$x = \frac{5 \pm \sqrt{17}}{2}$

Find the discriminant. State the number and type of solutions.

17. $2x^2 + 7x = 10x + 5$

$2x^2 - 3x - 5 = 0$

$9 - 4(2)(-5)$

$9 + 40$

49

2 real

18. $4x^2 - 12x + 9 = 0$

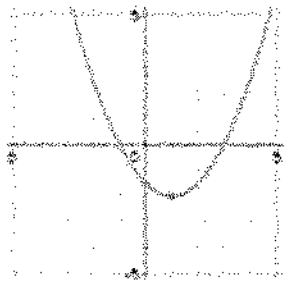
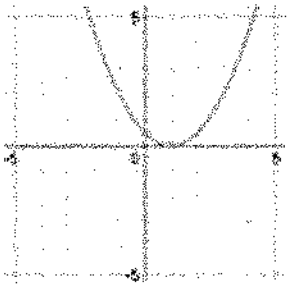
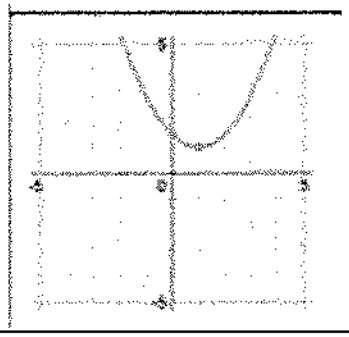
$144 - 4(4)(9)$

0

1 real

Match the quadratic function with its discriminant value.

a. zero
b. positive
c. negative

19.	20.	21.
 b	 a	 c