

## Unit 2 Test Review

Date \_\_\_\_\_ Period \_\_\_\_\_

**Factor each completely.**

1)  $x^2 + 4x - 21$

2)  $n^2 - 9n + 10$

3)  $3r^2 + 10r$

4)  $10n^2 - 102n + 108$

5)  $27n^2 - 12$

6)  $9b^2 + 38b + 8$

**Solve each equation by factoring.**

7)  $2x^2 + 10x = -8$

8)  $n^2 = 7n$

9)  $7x^2 = 25x - 12$

10)  $4k^2 = 3 - k$

**Solve each equation by taking square roots.**

11)  $x^2 = 42$

12)  $-m^2 = -98$

13)  $v^2 - 5 = 4$

14)  $3x^2 + 8 = 122$

15)  $(x - 2)^2 = -80$

16)  $3(x - 9)^2 = -27$

**Solve each equation with the quadratic formula.**

17)  $8r^2 - 8r = -4$

18)  $7x^2 - 7 = 2x$

**Write each quadratic in vertex form by completing the square.**

19)  $y = x^2 - 6x + 7$

20)  $y = x^2 + 4x + 8$

**Write the quadratic equation given the roots.**

21) Roots at  $x=-9$  and  $x=-1$

22) X-intercepts  $(-8, 0)$  and  $(4, 0)$

23) Solutions:  $\{-\frac{5}{3}, 6\}$

24) Solutions:  $x=0$  and  $x=\frac{8}{7}$

**Find the discriminant of each quadratic equation then state the number and type of solutions.**

25)  $-x^2 - 4x + 3 = 7$

26)  $-6m^2 - 6m - 8 = -2$

27)  $2v^2 - v = 6$

**Simplify.**

28)  $(1 - 3i)^2$

29)  $(-1 + 6i)(4 - i)$

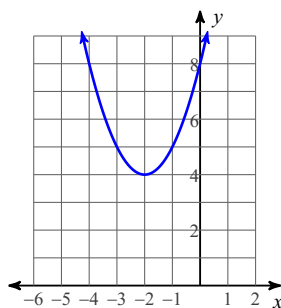
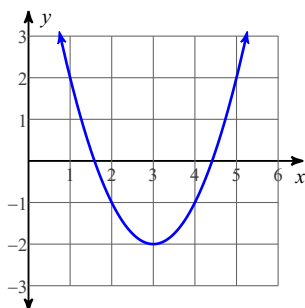
30)  $(3 + 4i) - (8 - 5i)$

31)  $(4 - 7i) + (-4 - 2i)$

32)  $(-2i)^5$

## Answers to Unit 2 Test Review

- |                                    |   |   |                                 |
|------------------------------------|---|---|---------------------------------|
| 1) $(x-3)(x+7)$                    | 2) not factorable                                 | 3) $r(3r+10)$   | 4) $2(5n-6)(n-9)$               |
| 5) $3(3n+2)(3n-2)$                 | 6) $(b+4)(9b+2)$                                  | 7) $\{-1, -4\}$   | 8) $\{7, 0\}$                   |
| 9) $\left\{\frac{4}{7}, 3\right\}$ | 10) $\left\{\frac{3}{4}, -1\right\}$              | 11) $\{\sqrt{42}, -\sqrt{42}\}$                                   | 12) $\{7\sqrt{2}, -7\sqrt{2}\}$ |
| 13) $\{3, -3\}$                    | 14) $\{\sqrt{38}, -\sqrt{38}\}$                   | 15) $\{2+4i\sqrt{5}, 2-4i\sqrt{5}\}$                              |                                 |
| 16) $\{9+3i, 9-3i\}$               | 17) $\left\{\frac{1+i}{2}, \frac{1-i}{2}\right\}$ | 18) $\left\{\frac{1+5\sqrt{2}}{7}, \frac{1-5\sqrt{2}}{7}\right\}$ |                                 |
| 19)                                | 20)   |   | 21) $(n+9)(n+1)$                |



- |                            |                                      |               |  |
|----------------------------|--------------------------------------|---------------|--|
| 22) $(x+8)(x-4)$           | 23) $(3p+5)(p-6)$                    | 24) $b(7b-8)$ |  |
| 25) 0; one real solution   | 26) $-108$ ; two imaginary solutions |               |  |
| 27) 49; two real solutions | 28) $-8-6i$                          | 29) $2+25i$   |  |
| 30) $-5+9i$                | 31) $-9i$                            | 32) $-32i$    |  |