

Skills Check

Date _____ Period _____

Solve each equation by taking square roots.

1) $-9 - 7r^2 = -128$

$$-7r^2 = -119$$

$$r^2 = 17$$

$$r = \pm\sqrt{17}$$

Solve each equation by factoring.

2) $(8n-1)(n+2) = 0$

$$8n-1=0$$

$$n+2=0$$

$$8n=1$$

$$n = \frac{1}{8}$$

$$n = -2$$

3) $p^2 + 5p - 3 = 3$

$$p^2 + 5p - 6 = 0$$
$$(p+6)(p-1) = 0$$

$$p+6=0 \quad p-1=0$$
$$p=-6 \quad p=1$$

4) $v^2 = 6v$

$$v^2 - 6v = 0$$

$$v(v-6) = 0$$

$$v=0 \quad v=6$$

Solve each equation by completing the square. You must use this method.

5) $r^2 + 6r + 5 = 0$

$$5) r^2 + 6r = -5$$

$$r^2 + 6r + 9 = -5 + 9$$

$$(r+3)^2 = 4$$

$$r+3 = \pm 2$$

$$r = 3 + 2 = 5$$

$$r = 3 - 2 = 1$$

$$p^2 - 4p = -8$$

$$p^2 - 4p + 4 = -8 + 4$$

$$(p-2)^2 = -4$$

$$p-2 = \pm 2i$$

$$p = 2 \pm 2i$$

6) $p^2 - 4p + 8 = 0$

7) $n^2 + 2n + 10 = 1$

$$7) n^2 + 2n = -9$$

$$n^2 + 2n + 1 = -9 + 1$$

$$(n+1)^2 = -8$$

$$n+1 = \pm 2i\sqrt{2}$$

$$n = -1 \pm 2i\sqrt{2}$$

8) $x^2 - 5x + 5 = x - 3$

$$8) x^2 - 6x = -8$$

$$x^2 - 6x + 9 = -8 + 9$$

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

$$x-3 = \pm 1$$

$$x = 3 \pm 1$$

and $x = 3 + 1$

$$x = 3 - 1$$

$$x = 4 + 2$$

Simplify

9. $2 \pm \sqrt{-16}$

9. $2 \pm 4i$

10. $4 \pm 2\sqrt{18} \rightarrow 4 \pm 2 \cdot 3\sqrt{2}$

10. $4 \pm 6\sqrt{2}$

11. $\frac{-2 \pm \sqrt{-28}}{4} = \frac{-2 \pm 2i\sqrt{7}}{4}$

28
^
4 7
A
2 2

11. $\frac{-1 \pm i\sqrt{7}}{2}$

True or False

12. $(x+2)^2 = x^2 + 2^2$

$(2x+3)(2x+3)$

12. False

13. $3 \pm 7\sqrt{2} = 10\sqrt{2}$

$4x^2 + 6x + 6x + 9$

13. False

14. $(2x+3)^2 = 2x^2 + 12x + 9$

14. False

15. If the vertex of a quadratic is (3,5), then the axis of symmetry is $y = 5$.

15. False $x=3$

MUST SHOW WORK!

16. Find the y-intercept of $f(x) = x^2 + 3x - 18$

16. _____

$f(0) = 0^2 + 3(0) - 18$
 $= -18$ $(0, -18)$

17. Find the x-intercepts of the graph by factoring.

17. _____

$f(x) = x^2 + 3x - 18$
 $= (x+6)(x-3)$ x int:
 $x = -6 + 3$ $(-6, 0)$
 $(3, 0)$

18. Draw a sketch of the graph based on your answers for 16-17.

