

Starter

Solve the equation.

7 FEB 2017

$$\sqrt{(\quad)^2} = (\quad)$$

$$(3x+1)^2 + 4 = 20$$

$$\sqrt{(3x+1)^2} = \sqrt{16}$$

$$3x+1 = \pm 4$$

$$3x+1 = 4 \quad \text{or} \quad 3x+1 = -4$$

$$\frac{3x}{3} = \frac{3}{3}$$

$$\frac{3x}{3} = \frac{-5}{3}$$

$$x = 1 \quad \text{or} \quad x = -\frac{5}{3}$$

$$1) \quad 8m^2 - 40 = 0$$

$$\frac{8m^2}{8} = \frac{40}{8}$$

$$\sqrt{m^2} = \sqrt{5}$$

$$m = \pm\sqrt{5}$$

$$m = \sqrt{5} \quad \text{or} \quad m = -\sqrt{5}$$

$$2) \quad 6x^2 - 42 = 0$$

$$\frac{6x^2}{6} = \frac{42}{6}$$

$$\sqrt{x^2} = \sqrt{7}$$

$$x = \sqrt{7} \quad \text{or} \quad x = -\sqrt{7}$$

$$3) \quad 4x^2 - 48 = 0$$

$$4) \quad \sqrt{(x-4)^2} = \sqrt{25}$$

$$x-4 = \pm 5$$

$$x-4 = 5 \quad \text{or} \quad x-4 = -5$$

$$x = 9 \quad \text{or} \quad x = -1$$

5)  $\frac{5(2x-1)^2}{5} = \frac{45}{5}$

$$\sqrt{(2x-1)^2} = \sqrt{9}$$

$$2x-1 = \pm 3$$

$$2x-1 = 3 \quad \& \quad 2x-1 = -3$$

$$\frac{+1}{+1} \quad \frac{+1}{+1} \quad \frac{+1}{+1} \quad \frac{+1}{+1}$$

$$\frac{2x}{2} = \frac{4}{2} \quad \frac{2x}{2} = \frac{-2}{2}$$

$x=2 \vee x=-1$

$(x+4)^2 = (x+4)(x+4)$

perfect square

$$x^2 + 4x + 4x + 16$$

$$x^2 + 8x + 16$$

perfect square trinomial

Solving equations by completing the square

$x$	$x^2$	$4x$
$4$	$4x$	$16$

$x^2 + 8x + 16$

Solving equations by completing the square

$$x^2 + 16x + 64$$

$x^2$	$8x$
$8x$	$64$

Solving equations by completing the square

$$y^2 + \frac{10y}{2} + \frac{25}{2}$$

Factor  $(y+5)^2$

$y^2$	$5y$
$5y$	$25$

Solving equations by completing the square

$$x^2 + \frac{28x}{2} + \frac{196}{2}$$

$x^2$	$14x$
$14x$	$196$

Solving equations by completing the square

$$25x^2 - \frac{30x}{2} + \frac{9}{2}$$

$25x^2$	$-15x$
$-15x$	$9$

Solving equations by completing the square

$$36x^2 + \frac{24x}{2} + \frac{4}{2}$$

$36x^2$	$12x$
$12x$	$4$

Practice Work

Do # 1 - 8 on worksheet "Solving Equations by Completing the Square"

