Algebra 1 Name_____ ID: 1

Completing the square

Date_____ Period____

Warm-Up:
Simplify the fractions: Get common denominators

1) $\frac{3}{2} + 5$

2) $\frac{10}{9} + \frac{1}{3}$

3) $\frac{3}{10} + \frac{1}{2}$

4) $\frac{3}{11} + \frac{3}{4}$

5) $\frac{5}{6} + \frac{7}{9}$

6) $4 + \frac{11}{13}$

Cwk/Hwk:
Solve each equation by completing the square.

7) $b^2 - 14b = 15$

8) $n^2 + 12n = -27$

9) $b^2 - 20b = 44$

10) $p^2 + 18p = -56$

11) $x^2 - 8x + 15 = 0$

12) $m^2 + 14m - 72 = 0$

13) $b^2 + 6b - 72 = 0$

14) $n^2 - 8n - 65 = 0$

15) $r^2 + 10r - 9 = 0$

16) $n^2 + 14n + 22 = 0$

17) $m^2 + 4m - 60 = 0$

18) $x^2 + 8x - 6 = 0$

Solve each equation by completing the square. (Fractions)

19) $p^2 - 15p = 100$

20) $p^2 + 5p - 19 = 0$

21) $b^2 - 9b + 4 = 0$

22) $p^2 - 9p - 22 = 0$

23) $b^2 - 7b + 12 = 0$

24) $x^2 + 13x - 48 = 0$

Warm-up:
Solve each equation by completing the square.

25) $v^2 - 12v = -11$

26) $k^2 + 14k = 72$

27) $v^2 + 2v - 22 = 0$

28) $n^2 + 14n - 31 = 0$

29) $n^2 + 17n - 38 = 0$

30) $b^2 - b = 90$

Cwk/Hwk:
Solve each equation by completing the square. (a is not 1)

31) $5x^2 + 20x = 25$

32) $7v^2 - 14v = 21$

33) $4n^2 + 8n - 96 = 0$

34) $5b^2 - 20b - 60 = 0$

35) $2n^2 - 4n - 48 = 0$

36) $3k^2 - 12k - 15 = 0$

37) $7b^2 + 14b - 21 = 0$

38) $7x^2 + 14x - 56 = 0$

39) $5a^2 - 10a - 60 = 0$

40) $9n^2 - 18n - 30 = 0$

41) $2a^2 - 16a - 18 = 0$

42) $9n^2 - 18n - 91 = 0$

43) $2n^2 + 8n - 24 = 0$

44) $6v^2 + 12v - 90 = 0$

45) $10r^2 - 20r - 80 = 0$

46) $2n^2 - 20n - 48 = 0$

47) $3n^2 + 6n - 6 = 0$

48) $2x^2 - 12x - 46 = 0$

Algebra 1 Name_____ ID: 1

Completing the square

Date_____ Period____

Warm-Up:
Simplify the fractions: Get common denominators

1) $\frac{3}{2} + 5$

$-7k - 9$

2) $\frac{10}{9} + \frac{1}{3}$

$6x + 4$

3) $\frac{3}{10} + \frac{1}{2}$

$5n + 8$

4) $\frac{3}{11} + \frac{3}{4}$

$13n$

5) $\frac{5}{6} + \frac{7}{9}$

$11p + 9$

6) $4 + \frac{11}{13}$

$p + 16$

Cwk/Hwk:
Solve each equation by completing the square.

7) $b^2 - 14b = 15$

$\{15, -1\}$

8) $n^2 + 12n = -27$

$\{-3, -9\}$

9) $b^2 - 20b = 44$

$\{22, -2\}$

10) $p^2 + 18p = -56$

$\{-4, -14\}$

11) $x^2 - 8x + 15 = 0$

$\{5, 3\}$

12) $m^2 + 14m - 72 = 0$

$\{4, -18\}$

13) $b^2 + 6b - 72 = 0$

$\{6, -12\}$

14) $n^2 - 8n - 65 = 0$

$\{13, -5\}$

15) $r^2 + 10r - 9 = 0$

$\{-5 + \sqrt{34}, -5 - \sqrt{34}\}$

16) $n^2 + 14n + 22 = 0$

$\{-7 + 3\sqrt{3}, -7 - 3\sqrt{3}\}$

17) $m^2 + 4m - 60 = 0$

$\{6, -10\}$

18) $x^2 + 8x - 6 = 0$

$\{-4 + \sqrt{22}, -4 - \sqrt{22}\}$

Solve each equation by completing the square. (Fractions)

19) $p^2 - 15p = 100$

$\{20, -5\}$

20) $p^2 + 5p - 19 = 0$ $\left\{\frac{-5 + \sqrt{101}}{2}, \frac{-5 - \sqrt{101}}{2}\right\}$

21) $b^2 - 9b + 4 = 0$ $\left\{\frac{9 + \sqrt{65}}{2}, \frac{9 - \sqrt{65}}{2}\right\}$

22) $p^2 - 9p - 22 = 0$

$\{11, -2\}$

23) $b^2 - 7b + 12 = 0$

$\{4, 3\}$

24) $x^2 + 13x - 48 = 0$

$\{3, -16\}$

Warm-up:
Solve each equation by completing the square.

25) $v^2 - 12v = -11$

$\{11, 1\}$

26) $k^2 + 14k = 72$

$\{4, -18\}$

27) $v^2 + 2v - 22 = 0$

$\{-1 + \sqrt{23}, -1 - \sqrt{23}\}$

28) $n^2 + 14n - 31 = 0$

$\{-7 + 4\sqrt{5}, -7 - 4\sqrt{5}\}$

29) $n^2 + 17n - 38 = 0$

$\{2, -19\}$

30) $b^2 - b = 90$

$\{10, -9\}$

Cwk/Hwk:
Solve each equation by completing the square. (a is not 1)

31) $5x^2 + 20x = 25$

$\{1, -5\}$

32) $7v^2 - 14v = 21$

$\{3, -1\}$

33) $4n^2 + 8n - 96 = 0$

$\{4, -6\}$

34) $5b^2 - 20b - 60 = 0$

$\{6, -2\}$

35) $2n^2 - 4n - 48 = 0$

$\{6, -4\}$

36) $3k^2 - 12k - 15 = 0$

$\{5, -1\}$

37) $7b^2 + 14b - 21 = 0$

$\{1, -3\}$

38) $7x^2 + 14x - 56 = 0$

$\{2, -4\}$

39) $5a^2 - 10a - 60 = 0$

$\{1 + \sqrt{13}, 1 - \sqrt{13}\}$

40) $9n^2 - 18n - 30 = 0$

$\left\{\frac{3 + \sqrt{39}}{3}, \frac{3 - \sqrt{39}}{3}\right\}$

41) $2a^2 - 16a - 18 = 0$

$\{9, -1\}$

42) $9n^2 - 18n - 91 = 0$

$\left\{4\frac{1}{3}, -2\frac{1}{3}\right\}$

43) $2n^2 + 8n - 24 = 0$

$\{2, -6\}$

44) $6v^2 + 12v - 90 = 0$

$\{3, -5\}$

45) $10r^2 - 20r - 80 = 0$

$\{4, -2\}$

46) $2n^2 - 20n - 48 = 0$

$\{12, -2\}$

47) $3n^2 + 6n - 6 = 0$

$\{-1 + \sqrt{3}, -1 - \sqrt{3}\}$

48) $2x^2 - 12x - 46 = 0$

$\{3 + 4\sqrt{2}, 3 - 4\sqrt{2}\}$