

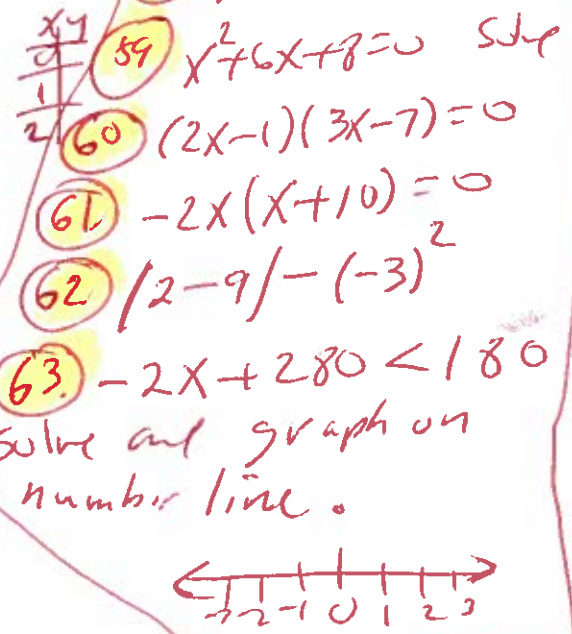
- 1)  $-2 \square - 1$   $<, >, =$  complete
- 2)  $-4 - (-8)$
- 3)  $3,2478 * 100$
- 4)  $3,2478 \div 1000$
- 5)  $(-2)^2$
- 6)  $(-3)^3$
- 7)  $-5^2$
- 8)  $20 \div 2 + 10 * 5 - 3$
- 9)  $2 + 2^2 * 3$
- 10)  $10 + 2^6 \div 8$
- 11)  $[12 + 2(12 - 4)] \div 4$
- 12)  $\frac{2}{7} - \frac{3}{4}$
- 13)  $\frac{7}{8} - \frac{3}{10}$
- 14)  $\frac{4}{5} \div \frac{2}{7}$
- 15)  $-\frac{7}{5} (-\frac{2}{3})$
- 16)  $\frac{24}{36}$  simplify
- 17)  $\frac{9}{4}$  write as a mixed #
- 18)  $\frac{24}{10} = \frac{x}{5}$
- 19)  $\frac{6}{12} = \frac{11}{x}$
- 20)  $12.75\%$  write as a decimal
- 21)  $24\%$  write as a fraction simplified
- 22)  $\frac{75}{100} - \frac{15}{20}$
- 23)  $\frac{2}{25} = \frac{8}{x}$
- 24)  $4p - 5u$ ,  $p = 1200$ ,  $u = 25,000$

25.  $4p - 6u$   $p = 1200$ ,  $u = 25000$   
 602-9880m1 ENDS May 3, 2018

ALEKS

- 26)  $2u + 3c$ ,  $u = 1000$ ,  $c = 500$
- 27)  $50x + 400 = 900$
- 28)  $2000x + 5000 = 25000$
- 29)  $11x + 1 = 13x + 21$
- 30)  $-9x - 42 = -6(x + 4)$
- 31)  $2x + 1 = 4x + 1$
- 32)  $2x + 2 = 2(x + 1)$
- 33)  $x + 2y = 20$   $y =$
- 34)  $ax + by = c$   $y =$
- 35)  $a + b = c$   $a =$
- 36) Find slope between  $(4, 2)$  and  $(-8, -4)$
- 37) graph  $y = -2x + 4$
- 38)  $x \cdot x^2 \cdot x^{10}$
- 39)  $\frac{x^{20}}{x^3}$
- 40)  $(x^2)^{10}$
- 41)  $(x^3)^7$
- 42)  $(2x)^3$
- 43)  $\frac{4x^3 y^7}{2x^2 y^{10}}$
- 44)  $(2x^3 y^3)(3x^2 y)$
- 45)  $(-5xy^3)^3$
- 46)  $2(3x - 2y - 7)$
- 47)  $2x(3x^2 - 6x - 5)$
- 48)  $-4(x - y) - 5x$

- 49)  $(3x - 2y)(3x - 2y)$
- 50)  $(5x + 2y)(5x - 2y)$
- 51)  $(3x - 7y)^2$
- 52)  $(x - 3)(x + 7)$
- 53)  $(x - 8)(x + 2)$
- 54)  $(x - 3)(x^2 - 7x - 3)$
- 55)  $2(x + 3)(x - 7)$
- 56)  $2(x + 8)(x - 7)$
- 57)  $-4(4 + x)(4 - x)$
- 58)  $x^2 + 6x + 8$  factor
- 59)  $x^2 + 6x + 8 = 0$  solve
- 60)  $(2x - 1)(3x - 7) = 0$
- 61)  $-2x(x + 10) = 0$
- 62)  $|2 - 9| - (-3)^2$
- 63)  $-2x + 280 < 180$   
Solve and graph on number line.



Practical  
ALEKS  
ends  
May 3, 2018  
Alphas

$$\textcircled{1} \quad -2 < -1$$

Math 0410 63 Aleks Step

04-30-18

$$\textcircled{2} \quad -4 - (-8) =$$
$$-4 + 8 =$$

$$\textcircled{4} =$$

$$\textcircled{3} \quad 3.2478 * 100 =$$

$$\textcircled{324.78} =$$

$$\textcircled{4} \quad 3.2478 \div 1000 =$$

$$\textcircled{.0032478} =$$

$$\textcircled{5} \quad (-2)^2 =$$

$$(-2)(-2) =$$

$$(4) =$$

$$\textcircled{4} =$$

$$\textcircled{6} \quad (-3)^3 =$$

$$(-3)(-3)(-3) =$$

$$(9)(-3) =$$

$$\textcircled{-27} =$$

$$7. -5^2 =$$

$$-(5)(5) =$$

$$-(25) =$$

$$\boxed{-25 =}$$

$$8. 20 \div 2 + 10 \times 5 - 3 =$$

$$10 + 10 \times 5 - 3 =$$

$$10 + 50 - 3 =$$

$$60 - 3 =$$

$$\boxed{57 =}$$

9.

$$2 + 2^2 \times 3 =$$

$$2 + (2)(2) \times 3 =$$

$$2 + (4) \times 3 =$$

$$2 + 12 =$$

$$\boxed{14 =}$$

$$10. 10 + 2^6 \div 8 =$$

$$10 + (2)(2)(2)(2)(2)(2) \div 8 =$$

$$10 + (64) \div 8 =$$

$$10 + 8 =$$

$$\boxed{18 =}$$

$$\begin{aligned}
(11) \quad & [12 + 2(12 - 4)] \div 4 = \\
& [12 + 2(8)] \div 4 = \\
& [12 + 16] \div 4 = \\
& [28] \div 4 = \\
& \boxed{7} =
\end{aligned}$$

$$\begin{aligned}
(12) \quad & \frac{2}{7} - \frac{3}{4} = \quad \text{Primes } 2, 3, 5, 7, \dots \\
& \frac{2}{7} \left(\frac{4}{4}\right) - \frac{3}{4} \left(\frac{7}{7}\right) = \quad 7 = 7 \checkmark \\
& \frac{8}{28} - \frac{21}{28} = \quad 4 = 2 \cdot 2 \quad \begin{array}{l} 2 \cdot 4 \\ 2 \cdot 2 \\ 1 \end{array} \\
& \frac{8 - 21}{28} = \quad \text{LCD} = 2 \cdot 2 \cdot 7 \\
& \quad \quad \quad = 28 \\
& \boxed{\frac{-13}{28}} =
\end{aligned}$$

$$\begin{aligned}
(13) \quad & \frac{7}{8} - \frac{3}{10} = \quad \text{Primes } 2, 3, 5, 7, \dots \\
& \frac{7}{8} \left(\frac{5}{5}\right) - \frac{3}{10} \left(\frac{4}{4}\right) = \quad \begin{array}{l} 2 \cdot 8 \quad 2 \cdot 10 \\ 2 \cdot 4 \quad 5 \cdot 2 \\ 2 \cdot 2 \quad 1 \end{array} \\
& \frac{35}{40} - \frac{12}{40} = \quad 8 = 2 \cdot 2 \cdot 2 \\
& \frac{35 - 12}{40} = \quad 10 = 2 \cdot 5 \\
& \boxed{\frac{23}{40}} = \quad \text{LCD} = 2 \cdot 2 \cdot 2 \cdot 5 \\
& \quad \quad \quad = 40
\end{aligned}$$

14.  $\frac{4}{5} \div \frac{2}{7} =$

$$\frac{4}{5} \cdot \frac{7}{2} =$$

$$\frac{2 \cdot 2}{5} \cdot \frac{7}{2} =$$

$$\frac{\cancel{2} \cdot 2}{5} \cdot \frac{7}{\cancel{2}} =$$

$$\frac{14}{5} =$$

Primes 2, 3, 5, 7, ...

$$\begin{array}{r} 2 \overline{)4} \\ 2 \overline{)2} \end{array}$$

4 = 2 · 2

15.  $-\frac{7}{5} \left(-\frac{2}{3}\right) =$

$$\frac{14}{15} =$$

16.  $\frac{24}{36}$  simplify

$$\frac{2 \cdot 2 \cdot 2 \cdot 3}{2 \cdot 2 \cdot 3 \cdot 3} =$$

$$\frac{\cancel{2} \cdot \cancel{2} \cdot 2 \cdot \cancel{3}}{\cancel{2} \cdot \cancel{2} \cdot \cancel{3} \cdot 3} =$$

$$\frac{2}{3} =$$

Primes 2, 3, 5, 7, ...

$$2 \overline{)24}$$

$$2 \overline{)12}$$

$$2 \overline{)6}$$

$$3 \overline{)3}$$

1

$$24 = 2 \cdot 2 \cdot 2 \cdot 3$$

$$36 = 2 \cdot 2 \cdot 3 \cdot 3$$

$$2 \overline{)36}$$

$$2 \overline{)18}$$

$$3 \overline{)9}$$

$$3 \overline{)3}$$

1

17.  $\frac{9}{4}$  write as a mixed number

$$\begin{array}{r} 4 \overline{) 9} \\ \underline{-(8)} \\ 1 \text{ rem} \end{array}$$

Long division

$2 \frac{1}{4}$

18.  $\frac{24}{10} = \frac{x}{5}$

$24(5) = 10(x)$  cross mult

$$\begin{array}{r} 24 \\ \times 5 \\ \hline 120 \end{array}$$

$120 = 10x$

$\frac{120}{10} = \frac{10x}{10}$

$12 = x$

19.  $\frac{6}{12} = \frac{11}{x}$

$$\begin{array}{r} 12 \\ \times 11 \\ \hline 12 \\ 12 \\ \hline 132 \end{array}$$

$6(x) = 12(11)$  cross mult

$6x = 132$

$\frac{6x}{6} = \frac{132}{6}$

$x = 22$

$$\begin{array}{r} 22 \\ 6 \overline{) 132} \\ \underline{-(12)} \\ 12 \\ \underline{-(12)} \\ 0 \text{ rem} \end{array}$$



20. 12.75% write as a decimal

0.1275 = Move decimal left two places

21. 24% write as a fraction simplified

$$\frac{24}{100} =$$

Primes 2, 3, 5, 7, ...

$$\frac{2 \cdot 2 \cdot 2 \cdot 3}{2 \cdot 2 \cdot 5 \cdot 5} =$$

$$\frac{\cancel{2} \cdot \cancel{2} \cdot 2 \cdot 3}{\cancel{2} \cdot \cancel{2} \cdot 5 \cdot 5} =$$

$$\frac{2 \cdot 3}{5 \cdot 5} =$$

$$\frac{6}{25} =$$

$\begin{array}{r} \cancel{2} \overline{) 24} \\ \underline{20} \phantom{0} \\ 4 \phantom{0} \\ \underline{40} \\ 0 \end{array}$	$\begin{array}{r} \cancel{2} \overline{) 100} \\ \underline{20} \phantom{00} \\ 80 \phantom{0} \\ \underline{80} \\ 0 \end{array}$
$\begin{array}{r} \cancel{2} \overline{) 6} \\ \underline{4} \\ 2 \end{array}$	$\begin{array}{r} \cancel{5} \overline{) 25} \\ \underline{10} \\ 15 \\ \underline{15} \\ 0 \end{array}$
$\begin{array}{r} \cancel{3} \overline{) 3} \\ \underline{3} \\ 0 \end{array}$	$\begin{array}{r} \cancel{5} \overline{) 5} \\ \underline{5} \\ 0 \end{array}$
1	1

22.  $\frac{75}{100} - \frac{15}{20} =$

$$\frac{75}{100} - \frac{15}{20} \left( \frac{5}{5} \right) =$$

$$\frac{75}{100} - \frac{75}{100} =$$

$$\frac{75 - 75}{100} =$$

$$\frac{0}{100} = 0$$

Primes 2, 3, 5, 7, ...

$\begin{array}{r} \cancel{2} \overline{) 100} \\ \underline{20} \phantom{00} \\ 80 \phantom{0} \\ \underline{80} \\ 0 \end{array}$	$\begin{array}{r} \cancel{2} \overline{) 20} \\ \underline{10} \\ 10 \\ \underline{10} \\ 0 \end{array}$
$\begin{array}{r} \cancel{5} \overline{) 25} \\ \underline{10} \\ 15 \\ \underline{15} \\ 0 \end{array}$	$\begin{array}{r} \cancel{5} \overline{) 5} \\ \underline{5} \\ 0 \end{array}$

$$100 = 2 \cdot 2 \cdot 5 \cdot 5$$

$$20 = 2 \cdot 2 \cdot 5$$

$$\text{LCD} = 2 \cdot 2 \cdot 5 \cdot 5 = 100$$

23.

$$\frac{2}{25} = \frac{8}{x}$$

$$\begin{array}{r} 4 \\ 25 \\ \times 8 \\ \hline 200 \end{array}$$

$2(x) = 25(8)$  cross mult

$$2x = 200$$

$$\frac{2x}{2} = \frac{200}{2}$$

$$\begin{array}{r} 100 \\ 2 \overline{) 200} \\ \underline{-(2)} \\ 00 \\ \underline{00} \\ 00 \end{array}$$

$x = 100$

24.

$4p - 5u =$ ,  $p = 1,200$ ,  $u = 25,000$

$$4(1200) - 5(25000) =$$

$$\$4800 - 125,000 =$$

$-120,200 =$

$$\begin{array}{r} 4 \text{ } 10 \\ 125 \overline{) 600} \\ \underline{480} \\ 120,200 \end{array}$$

25.

$4p - 6u =$ ,  $p = 1200$ ,  $u = 25000$

$$4(1200) - 6(25000) =$$

$$\$4800 - 150,000 =$$

$-145,200 =$

$$\begin{array}{r} 9 \text{ } 10 \\ 150 \overline{) 000} \\ \underline{-480} \\ 145,200 \end{array}$$

26.

$2u + 3c =$ ,  $u = 1000$ ,  $c = 500$

$$2(1000) + 3(500) =$$

$$2,000 + 1,500 =$$

$3,500 =$



$$\begin{aligned} \textcircled{27.} \quad & \$50x + \$400 = \$900 \\ & \$50x + \cancel{\$400} - \cancel{\$400} = \$900 - \cancel{\$400} \\ & \$50x = \$500 \\ & \frac{\cancel{\$50}x}{\cancel{50}} = \frac{\cancel{\$500}}{\cancel{50}} \end{aligned}$$

$$x = 10$$

$$\begin{aligned} \textcircled{28.} \quad & 2,000x + 5,000 = 25,000 \\ & 2,000x + \cancel{5,000} - \cancel{5,000} = 25,000 - \cancel{5,000} \end{aligned}$$

$$2,000x = 20,000$$

$$\frac{\cancel{2,000}x}{\cancel{2,000}} = \frac{\cancel{20,000}}{\cancel{2,000}}$$

$$x = 10$$

$$29 \quad 11x + 1 = 13x + 21$$

$$11x + 1 - 1 = 13x + 21 - 1$$

$$11x = 13x + 20$$

$$11x - 13x = 13x + 20 - 13x$$

$$-2x = 20$$

$$\frac{-2x}{-2} = \frac{20}{-2}$$

$$x = -10$$

$$30, \quad -9x - 42 = -6(x + 4)$$

$$-9x - 42 = -6x - 24$$

$$-9x - 42 + 42 = -6x - 24 + 42$$

$$-9x = -6x + 18$$

$$-9x + 6x = -6x + 18 + 6x$$

$$-3x = 18$$

$$\frac{-3x}{-3} = \frac{18}{-3}$$

$$x = -6$$

$$\textcircled{31} \quad 2x+1 = 4x+1$$

$$2x + \cancel{1} = 4x + \cancel{1}$$

$$2x = 4x$$

$$2x - 4x = 4x - 4x$$

$$-2x = 0$$

$$\frac{-2x}{-2} = \frac{0}{-2}$$

$$\textcircled{x = 0}$$

$$\textcircled{32} \quad 2x+2 = 2(x+1)$$

$$2x+2 = 2x+2$$

$$2x + \cancel{x} - \cancel{x} = 2x + \cancel{x} - \cancel{x}$$

$$2x = 2x$$

$$2x - 2x = 2x - 2x$$

$$0 = 0$$

$\textcircled{\text{all real numbers}}$

33.

$$x + 2y = 20$$

$$y =$$

$$\cancel{x} + 2y - \cancel{x} = 20 - \cancel{x}$$

$$2y = 20 - x$$

$$\frac{\cancel{2}y}{\cancel{2}} = \frac{20}{2} - \frac{x}{2}$$

$$y = 10 - \frac{x}{2}$$

$$y = 10 - \frac{1}{2}x$$

OR

$$y = -\frac{1}{2}x + 10$$

34.

$$ax + by = c$$

$$y =$$

$$\cancel{ax} + by - \cancel{ax} = c - \cancel{ax}$$

$$by = c - ax$$

$$\frac{\cancel{b}y}{\cancel{b}} = \frac{c}{b} - \frac{ax}{b}$$

$$y = \frac{c}{b} - \frac{ax}{b}$$

OR

$$y = -\frac{a}{b}x + \frac{c}{b}$$

$$35. a + b = c$$

$$a =$$

$$a + b - b = c - b$$

$$a = c - b$$

36. Find the slope  
(4, 2) and (-8, -4)  
 $x_1 \quad y_1 \quad x_2 \quad y_2$

$$m = \frac{y_1 - y_2}{x_1 - x_2}$$

$$m = \frac{(2) - (-4)}{(4) - (-8)}$$

$$m = \frac{2 + 4}{4 + 8}$$

$$m = \frac{6}{12}$$

$$m = \frac{6(1)}{6(2)}$$

$$m = \frac{1}{2}$$

37  $y = -2x + 4$  graph

$y = -2(0) + 4$

$y = 0 + 4$

$y = 4$

$y = -2(2) + 4$

$y = -4 + 4$

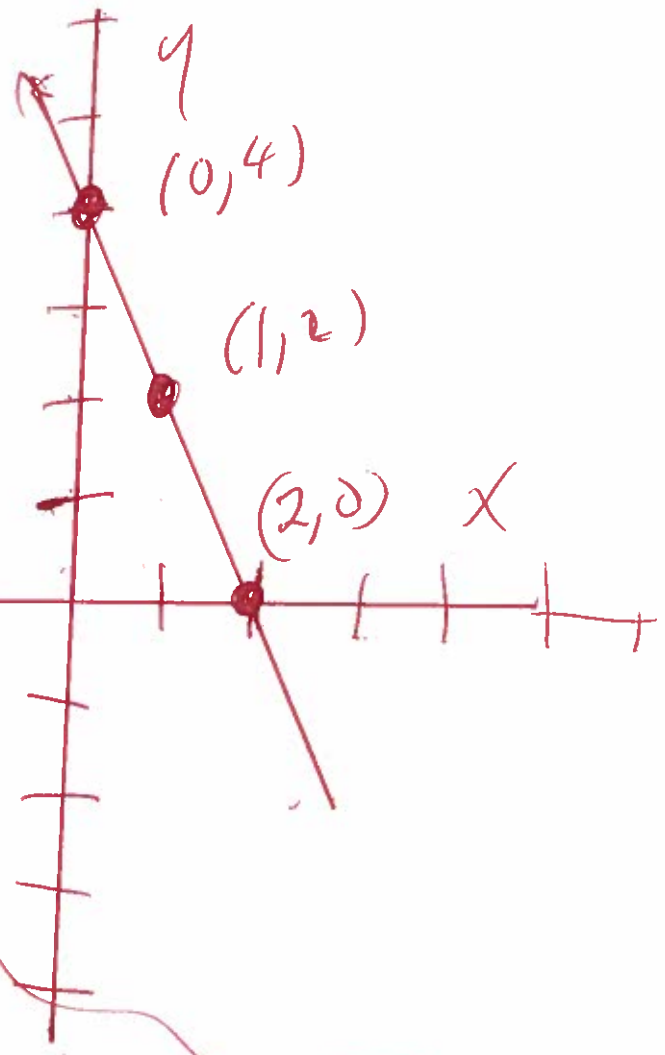
$y = 0$

$y = -2(1) + 4$

$y = -2 + 4$

$y = 2$

X	Y
0	4
1	2
2	0



38  $X^0 \cdot X^2 \cdot X^{10} =$

$X^1 \cdot X^2 \cdot X^{10} =$

$1 + 2 + 10$

$X =$

$X^{13} =$



39

$$\frac{x^{20}}{x^3} =$$

$$x^{20-3} =$$

$$x^{17} =$$

40

$$(x^2)^{10} =$$

$$x^{(2)(10)} =$$

$$x^{20} =$$

41

$$(x^3)^{-7} =$$

$$x^{(3)(-7)} =$$

$$x^{-21} =$$

$$\begin{aligned} & \textcircled{42} \quad (2x)^3 \\ & (2x)(2x)(2x) = \\ & \quad 8x^{1+1+1} \\ & \quad \underline{8x^3} \end{aligned}$$

$$\begin{aligned} & \textcircled{43} \quad \frac{4x^3y^7}{2xy^{10}} = \\ & \frac{4x^3y^7}{2x^1y^{10}} = \\ & \frac{\cancel{2}(2)x^{3-1}}{\cancel{2}y^{10-7}} = \\ & \underline{\frac{2x^2}{y^3}} \end{aligned}$$

44

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

$$6x^{3+2}y^{3+1} =$$

$$6x^5y^4 =$$

45

$$(-5xy^3)^3 =$$

$$(-5)^3x^3y^9 =$$

$$(-5)^{1(3)}x^{1(3)}y^{3(3)} =$$

$$(-5)^3x^3y^9 =$$

$$(-5)(-5)(-5)x^3y^9 =$$

$$25(-5)x^3y^9 =$$

$$-125x^3y^9 =$$

$$46. \quad 2(3x - 2y - 7) =$$

$$6x - 4y - 14 =$$

$$47. \quad 2x(3x^2 - 6x - 5) =$$

$$6x^3 - 6x^2 - 10x =$$

$$48. \quad -4(x - y) - 5x =$$

$$-4x + 4y - 5x =$$

$$-9x + 4y =$$

$$49. \quad (3x - 2y)(3x - 2y) =$$

$$9x^2 - 6xy - 6xy + 4y^2 =$$

$$9x^2 - 12xy + 4y^2 =$$

$$50. \quad (5x + 2y)(5x - 2y) =$$

$$25x^2 - 10xy + 10xy - 4y^2 =$$

$$25x^2 - 4y^2 =$$

$$\begin{aligned} 51) \quad (3x-7y)^2 &= \\ (3x-7y)(3x-7y) &= \\ 9x^2 - 21xy - 21xy + 49y^2 &= \\ 9x^2 - 42xy + 49y^2 &= \end{aligned}$$

$$\begin{aligned} 52) \quad (x-3)(x+7) &= \\ x^2 + 7x - 3x - 21 &= \\ x^2 + 4x - 21 &= \end{aligned}$$

$$\begin{aligned} 53) \quad (x-8)(x+2) &= \\ x^2 + 2x - 8x - 16 &= \\ x^2 - 6x - 16 &= \end{aligned}$$

$$\begin{aligned} 54) \quad (x-3)(x^2-7x-3) &= \\ x^3 - 7x^2 - 3x - 3x^2 + 21x + 9 &= \\ x^3 - 10x^2 + 18x + 9 &= \end{aligned}$$

$$\begin{aligned} 55) \quad & 2(x+3)(x-7) = \\ & 2(x^2 - 7x + 3x - 21) = \\ & 2(x^2 - 4x - 21) = \end{aligned}$$

$$2x^2 - 8x - 42 =$$

$$\begin{aligned} 56) \quad & -2(x+7)(x-7) = \\ & -2(x^2 - 7x + 7x - 49) = \\ & -2(x^2 - 49) = \end{aligned}$$

$$-2x^2 + 98 =$$

$$\begin{aligned} 57) \quad & -4(4+x)(4-x) = \\ & -4(16 - 4x + 4x - x^2) = \\ & -4(16 - x^2) = \end{aligned}$$

$$-64 + 4x^2 =$$

$$58) \quad \text{factor} \\ x^2 + 6x + 8 =$$

$$(x+2)(x+4) \quad \text{good}$$

$$\begin{array}{l} 8 \cdot 1 \\ 2 \cdot 4 \end{array} \quad \text{possible}$$

$$\begin{aligned} \text{ck. } & (x+2)(x+4) = \\ & x^2 + 4x + 2x + 8 = \\ & x^2 + 6x + 8 = \end{aligned}$$



(59)  $x^2 + 6x + 8 = 0$  Solve

$$(x+2)(x+4) = 0$$

(8.1)  
(2.4) Pairs

but  $x+2=0$  OR  $x+4=0$

$$x + \cancel{x} - \cancel{x} = 0 - 2 \quad \text{OR} \quad x + \cancel{4} - \cancel{4} = 0 - 4$$

$x = -2$  OR  $x = -4$

(60)  $(2x-1)(3x-7) = 0$  Solve

but  $2x-1=0$  OR  $3x-7=0$

$$2x - \cancel{1} + \cancel{x} = 0 + 1 \quad \text{OR} \quad 3x - \cancel{7} + \cancel{x} = 0 + 7$$

$$2x = 1 \quad \text{OR} \quad 3x = 7$$

$$\frac{2x}{2} = \frac{1}{2} \quad \text{OR} \quad \frac{3x}{3} = \frac{7}{3}$$

$x = \frac{1}{2}$  OR  $x = \frac{7}{3}$

$$(61) -2x(x+10)=0 \quad \text{Solve}$$

$$\text{or } -2x=0 \quad \text{OR} \quad x+10=0$$

$$\frac{-2x}{-2} = \frac{0}{-2} \quad \text{OR} \quad x+10-10=0-10$$

$$x=0 \quad \text{OR} \quad x=-10$$

$$(62) |2-9| - (-3)^2 =$$

$$|-7| - (-3)(-3) =$$

$$(7) - (9) =$$

$$7 - 9 =$$

$$-2 =$$

$$(63) -2x + 280 < 180$$

$$-2x + 280 - 280 < 180 - 280$$

$$-2x < -100$$

$$\frac{-2x}{-2} > \frac{-100}{-2} \quad \text{Two sides of inequality are multiplied by a negative number}$$

$$x > 50$$

50

(50,  $\infty$ )