

- 1) $7y+2=75+3y$ solve
- 2) $\frac{x}{8} = \frac{x+1}{9}$ solve
- 5) $1 + \frac{6}{x} = -11$ solve
- 7) $4-x=2(x-4)$ solve
- 8) $\frac{7+x}{x} = 22$ solve
- 9) Find a, $ax-40=x+2, x=2$
- 10) $\frac{6x}{2} = 18$ solve
- 11) $6x+20=2x$ solve
- 12) Find C, $k=c+293, k=20$
- 13) $6(x-2)-12=2x$ solve
- 14) Find y, if $3x+5y=29, x=3$
- 17) $x-20=5x-20$ solve
- 19) $10-x=x-10$ solve
- 21) $\frac{2}{5x} + \frac{1}{x} = 21$ solve
- 30) $\frac{x}{4} + \frac{3x}{8} > 10$ solve
- 32) Find $f(4)$ if $f(x) = \frac{x+10}{x-5}$
- 33) Find A, $A=\pi r^2, \pi=3.14, r=6$
- 34) Find C, $C = \frac{5}{9}(F-32), F=50$
- 35) Find $f(-3)$, $f(x) = 2x^2 - 4x - 10$
- 36) If $x=-5$ evaluate $(x+9)(x+5)$
- 40) Find $f(8)$, $f(x) = x^{-2}$
- 54) (Mean) \$1000, \$2000, \$4000, \$7000, \$9000
- 56) $1000(1.05)^2$
- 60) Simplify $-2a^3(ab^2 + b^2)$
- 62) $(\frac{4}{x})^3$
- 63) $(\frac{2x}{3y}) (\frac{27y}{8x^2})$
- 64) $\frac{x+4x^2}{x}$ simpl. (041615)
- 66) $a^2+n+8b^2 = (a+b)(a+8b)$ $n =$
- 68) Area of a rectangle $L=x+3, W=2x-9$
- 70) If $4x^2-16=m$ then $\sqrt{x^2-4} =$
- 71) $(2xy^8)^4$ simplify
- 72) $(\frac{8k}{2})^2$ simplify
- 74) $m - 0.25m$ simplify
- 76) $\frac{ax-b}{4a-1} = b$ $x =$
- 77) $\frac{-45x^8y^7z^{11}}{-30x^2y^5z^4}$ simplify
- 78) $(3x+2y)(3x-2y)$ simplify
- 80) $(4x-3y)^2$ simplify
- 120) Factor $\frac{9x^2}{16} - \frac{25y^2}{49}$
- 143) Factor $x^3 + 6x^2 + 8x$
- 148) Factor GCF $3x^3 - 18x^2 + 3x$
- 150) Solve $x^2 - 6x + 8 = 0$
- 154) Solve $x^2 + 6x - 7 = 0$
- 157) Solve $x^2 + 12 = 7x$
- 162) Solve $2x^2 - 5x - 3 = 0$
- 165) Solve $8x^2 + 7x - 1 = 0$
- 169) Solve $(x+2)^2 = 9$
- 175) Solve $\sqrt{x+3} = 5$
- 177) $\sqrt{x} + 2 = 5$ $x =$
- 189) $x+y=50$
 $x-y=0$ $x =$
- 193) Graph $y = -2x + 4$

50 Questions



$$\textcircled{1} \quad 7y + 2 = 15 + 3y$$

$$7y + 2 - 2 = 15 + 3y - 2$$

$$7y = 3y + 13$$

$$7y - 3y = 3y + 13 - 3y$$

$$4y = 13$$

$$\frac{4y}{4} = \frac{13}{4}$$

$$y = \frac{13}{4}$$

2.

2.

$$\frac{x}{8} = \frac{x+1}{9}$$

$$9(x) = 8(x+1) \quad (\text{Cross multiply})$$

$$9x = 8x + 8$$

$$9x - 8x = 8x + 8 - 8x$$

$$x = 8$$

5.

$$1 + \frac{6}{x} = -11$$

$$1 + \frac{6}{x} - 1 = -11 - 1$$

$$\frac{6}{x} = -12$$

$$\frac{6}{x} = \frac{-12}{1}$$

$$1(6) = -12(x)$$

$$6 = -12x$$

$$\frac{6}{-12} = \frac{-12x}{-12}$$

$$-\frac{6}{12} = x$$

$$-\frac{6(1)}{6(2)} = x$$

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

(Cross Multiply)

$$\textcircled{7} \quad 4-x = 2(x-4)$$

$$4-x = 2x-8$$

$$\cancel{4-x} - \cancel{4} = 2x-8-4$$

$$-x = 2x-12$$

$$-x-2x = \cancel{2x-12} - \cancel{2x}$$

$$-1x-2x = -12$$

$$-3x = -12$$

$$\frac{-3x}{-3} = \frac{-12}{-3}$$

$$x = 4$$

3.

$$\textcircled{8} \quad \frac{7+x}{x} = 22$$

$$\frac{7+x}{x} = \frac{22}{1}$$

$$1(7+x) = 22(x) \quad (\text{cross multiply})$$

$$7+1x = 22x$$

$$7 + \cancel{x} - \cancel{x} = 22x - 1x$$

$$7 = 21x$$

$$\frac{7}{21} = \frac{\cancel{21}x}{\cancel{21}}$$

$$\frac{7}{21} = x$$

$$\frac{\cancel{7}(1)}{\cancel{7}(3)} = x$$

$$\frac{1}{3} = x$$

9) Find a , $ax - 40 = x + 2$, $x = 2$

$$ax - 40 = x + 2$$

$$a(2) - 40 = (2) + 2$$

$$2a - 40 = 2 + 2$$

$$2a - 40 = 4$$

$$2a - \cancel{40} + \cancel{40} = 4 + 40$$

$$2a = 44$$

$$\frac{2a}{2} = \frac{44}{2}$$

$$a = 22$$

4

10) $\frac{6x}{2} = 18$

$$3x = 18$$

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

$$x = 6$$

11) $6x + 20 = 2x$

$$6x + \cancel{20} - \cancel{20} = 2x - 20$$

$$6x = 2x - 20$$

$$6x - 2x = 2x - 20 - 2x$$

$$4x = -20$$

$$\frac{4x}{4} = \frac{-20}{4}$$

$$x = -5$$

(12) Find C if $k = C + 293$ and $k = 20$

$$k = C + 293$$

$$20 = C + 293$$

$$20 - 293 = C + \cancel{293} - \cancel{293}$$

$$\underline{-273 = C}$$

S.

(13) $6(x-2) - 12 = 2x$

$$6x - 12 - 12 = 2x$$

$$6x - 24 = 2x$$

$$6x - \cancel{24} + 24 = 2x + 24$$

$$6x = 2x + 24$$

$$6x - 2x = \cancel{2x} + 24 - \cancel{2x}$$

$$4x = 24$$

$$\frac{4x}{4} = \frac{24}{4}$$

$$\underline{x = 6}$$

(14) Find y if $3x + 5y = 29$ and $x = 3$

$$3x + 5y = 29$$

$$3(3) + 5y = 29$$

$$9 + 5y = 29$$

$$\cancel{9} + 5y - \cancel{9} = 29 - 9$$

$$5y = 20$$

$$\frac{5y}{5} = \frac{20}{5}$$

$$\underline{y = 4}$$

$$(17) \quad x - 20 = 5x - 20$$

$$x - 20 + 20 = 5x - 20 + 20$$

$$x = 5x$$

$$x - 5x = 5x - 5x$$

$$1x - 5x = 0$$

$$-4x = 0$$

$$\frac{-4x}{-4} = \frac{0}{-4}$$

$$x = 0$$

6.

$$(19) \quad 10 - x = x - 10$$

$$10 - x - 10 = x - 10 - 10$$

$$-x = x - 20$$

$$-x - x = x - 20 - x$$

$$-1x - 1x = -20$$

$$-2x = -20$$

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

$$x = 10$$

$$\begin{array}{r} 21 \\ \times 5 \\ \hline 105 \end{array}$$

$$\begin{array}{r} 35 \\ 3 \overline{) 105} \\ \underline{(9)} \\ 15 \\ \underline{-(15)} \\ 0 \end{array}$$

$$(21) \quad \frac{2}{5x} + \frac{1}{x} = 21$$

$$\text{LCD} = 5x$$

$$\frac{2}{5x}(5x) + \frac{1}{x}(5x) = 21(5x)$$

$$2(1) + 1(5) = 105x$$

$$2 + 5 = 105x$$

$$7 = 105x$$

$$\frac{7}{105} = \frac{105x}{105}$$

$$\frac{7}{105} = x$$

$$\frac{7(1)}{7(105)} = x$$

$$\frac{1}{15} = x$$

$$\begin{array}{r} 35 \\ 5 \overline{) 105} \\ \underline{5} \\ 7 \\ \underline{7} \\ 0 \end{array}$$

$$\textcircled{30} \quad \frac{x}{4} + \frac{3x}{8} > 10 \quad \text{LCD} = 8$$

$$\frac{x}{4}(8) + \frac{3x}{8}(8) > 10(8)$$

$$x(2) + 3x(1) > 80$$

$$2x + 3x > 80$$

$$5x > 80$$

$$\frac{5x}{5} > \frac{80}{5}$$

$$\textcircled{x > 16}$$

$$\begin{array}{r} 16 \\ 5 \overline{) 80} \\ \underline{-(5)} \\ 30 \\ \underline{-(30)} \\ 0 \end{array}$$

7.

$$\textcircled{32} \quad \text{Find } f(4) \text{ if } f(x) = \frac{x+10}{x-5}$$

$$f(x) = \frac{x+10}{x-5}$$

$$f(4) = \frac{(4)+10}{(4)-5}$$

$$f(4) = \frac{4+10}{4-5}$$

$$f(4) = \frac{14}{-1}$$

$$\textcircled{f(4) = -14}$$

$$\textcircled{33} \quad \text{Find } A \text{ if } A = \pi r^2, \pi = 3.14, r = 6$$

$$A = \pi r^2$$

$$A = 3.14 (6)^2$$

$$A = 3.14 (6)(6)$$

$$A = 3.14 (36)$$

$$\textcircled{A = 113.04}$$

$$\begin{array}{r} 3.14 \\ \times 36 \\ \hline 1884 \\ 942 \\ \hline 113.04 \end{array}$$

34) Find C if $C = \frac{5}{9}(F-32)$ and $F=50$

$$C = \frac{5}{9}(F-32)$$

$$C = \frac{5}{9}(50-32)$$

$$C = \frac{5}{9}(18)$$

$$C = \frac{5}{1}(2)$$

$$C = 10$$



35) Find $f(-3)$ if $f(x) = 2x^2 - 4x - 10$

$$f(x) = 2x^2 - 4x - 10$$

$$f(-3) = 2(-3)^2 - 4(-3) - 10$$

$$f(-3) = 2(-3)(-3) - 4(-3) - 10$$

$$f(-3) = 2(9) - 4(-3) - 10$$

$$f(-3) = 18 + 12 - 10$$

$$f(-3) = 30 - 10$$

$$f(-3) = 20$$

40) Find $f(8)$ if $f(x) = x^{-2}$

$$f(x) = x^{-2}$$

$$f(8) = 8^{-2}$$

$$f(8) = \frac{1}{8^2}$$

$$f(8) = \frac{1}{(8)(8)}$$

$$f(8) = \frac{1}{64}$$

54) Find the mean of
1000, 2000, 4000, 7000, 9000

$$\begin{array}{r} 1000 \\ 2000 \\ 4000 \\ 7000 \\ + 9000 \\ \hline 23000 \end{array}$$

$$\begin{array}{r} 4600 \\ 5 \overline{) 23000} \\ \underline{-(20)} \\ 30 \\ \underline{-(30)} \\ 00 \\ \underline{00} \\ 0 \end{array}$$

9.

56) Evaluate

$$\begin{aligned} 1000(1.05)^2 &= \\ 1000(1.05)(1.05) &= \\ 1000(1.1025) &= \\ 1102.5 &= \end{aligned}$$
$$\begin{array}{r} 1.05 \\ \times 1.05 \\ \hline 525 \\ 1000 \\ \hline 1.1025 \end{array}$$

60. Simplify $-2a^3(ab^2 + b^2) =$

$$\begin{aligned} -2a^3(a^1b^2 + b^2) &= \\ -2a^{3+1}b^2 - 2a^3b^2 &= \\ -2a^4b^2 - 2a^3b^2 &= \end{aligned}$$

62. Simplify $\left(\frac{4}{x}\right)^3 =$

$$\begin{aligned} \left(\frac{4}{x}\right)\left(\frac{4}{x}\right)\left(\frac{4}{x}\right) &= \\ \frac{64}{x^3} &= \end{aligned}$$

63. Simplify

$$\left(\frac{2x}{3y}\right)\left(\frac{27y}{8x^2}\right) =$$

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

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

$$\frac{9}{4x} =$$

10

64. Simplify

$$\frac{x + 4x^2}{x} =$$

$$\frac{x}{x} + \frac{4x^2}{x} =$$

$$\frac{x}{x} + \frac{4 \cdot x \cdot x}{x} =$$

$$1 + 4x =$$

66. If $a^2 + N + 8b^2 = (a+b)(a+8b)$ then $N =$

$$= a^2 + 8ab + ab + 8b^2$$

$$= a^2 + 8ab + 1ab + 8b^2$$

$$= a^2 + 9ab + 8b^2$$

$$N = 9ab$$

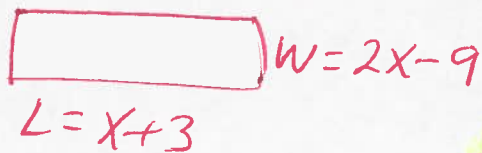
68 Find the area of a rectangle

$$A = LW$$

$$A = (x+3)(2x-9)$$

$$A = 2x^2 - 9x + 6x - 27$$

$$A = 2x^2 - 3x - 27$$


$$W = 2x - 9$$
$$L = x + 3$$



70 If $4x^2 - 16 = m$ then

$$x^2 - 4 =$$

$$4x^2 - 16 = m$$

$$\frac{4x^2}{4} - \frac{16}{4} = \frac{m}{4}$$

$$x^2 - 4 = \frac{m}{4}$$

71 Simplify

$$(2xy^8)^4 =$$

$$((2)^1 x^1 y^8)^4 =$$

$$(2)^4 x^4 y^{32} =$$

$$(2)(2)(2)(2) x^4 y^{32} =$$

$$16x^4 y^{32} =$$

72 Simplify

$$\left(\frac{8k}{2}\right)^2 =$$

$$(4k)^2 =$$

$$(4k)(4k) =$$

$$16k^2 =$$

74) Simplify $m - .25m =$

$$1.00m - .25m =$$

$$.75m =$$

76) solve $\frac{ax-b}{4a-1} = b$ LCD = $4a-1$

$$\left(\frac{ax-b}{4a-1}\right)(4a-1) = b(4a-1)$$

$$ax - b = 4ab - b$$

$$ax - \cancel{b} + \cancel{b} = 4ab - \cancel{b} + \cancel{b}$$

$$ax = 4ab$$

$$\frac{\cancel{ax}}{a} = \frac{4ab}{a}$$

$$x = 4b$$

77) Simplify $\frac{-45x^8y^7z^{11}}{-30x^2y^5z^4} =$

$$\frac{-15(3)x^{8-2}y^{7-5}z^{11-4}}{-15(2)} =$$

$$\frac{3x^6y^2z^7}{2} =$$

78) Simplify $(3x+2y)(3x-2y) =$

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

$$9x^2 - 4y^2 =$$

12.

80 Simplify $(4x-3y)^2 =$
 $(4x-3y)(4x-3y) =$
 $16x^2 - 12xy - 12xy + 9y^2 =$
 $16x^2 - 24xy + 9y^2 =$

13.

120 Factor $\frac{9x^2}{16} - \frac{25y^2}{49} =$ $a^2 - b^2 = (a+b)(a-b)$

$(\frac{3x}{4})^2 - (\frac{5y}{7})^2 =$
 $(\frac{3x}{4} + \frac{5y}{7})(\frac{3x}{4} - \frac{5y}{7}) =$

145 Factor $x^3 + 6x^2 + 8x =$
 $x(x^2 + 6x + 8) =$
 $x(x+2)(x+4) =$

8.1
2.4

148 Factor GCF $3x^3 - 18x^2 + 3x =$
 $3x(x^2 - 6x + 1) =$

150. Solve $x^2 - 6x + 8 = 0$
 $(x-2)(x-4) = 0$
 Set $x-2 = 0$ OR $x-4 = 0$
 $x - \cancel{2} + \cancel{2} = 0 + 2$ OR $x - \cancel{4} + \cancel{4} = 0 + 4$
 $x = 2$ OR $x = 4$

8.1
2.4

(154) Solve $x^2 + 6x - 7 = 0$ (1.7)

$$(x-1)(x+7) = 0$$

Set $x-1=0$ OR $x+7=0$

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

$x=1$ OR $x=-7$

14

(157) Solve $x^2 + 12 = 7x$

$$x^2 + 12 - 7x = 7x - 7x$$

$$x^2 + 12 - 7x = 0$$

$$x^2 - 7x + 12 = 0$$

$$(x-3)(x-4) = 0$$

Set $x-3=0$ OR $x-4=0$

$$x-3+3=0+3 \quad \text{OR} \quad x-4+4=0+4$$

$x=3$ OR $x=4$

12.1
6.2
3.4

(162) Solve $2x^2 - 5x - 3 = 0$ (2.8) (3.1)

$$(2x+1)(x-3) = 0$$

Set $2x+1=0$ OR $x-3=0$

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

$$2x = -1$$

OR $x=3$

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

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

(65) Solve $8x^2 + 7x - 1 = 0$

$$(8x-1)(x+1) = 0$$

Set $8x-1=0$ OR $x+1=0$

$$8x-1+1=0+1 \quad \text{OR} \quad x+1-1=0-1$$

$$8x=1$$

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

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

$$\text{OR} \quad x = -1$$

8.1
2.4

15

OR use Quadratic formula

$$8x^2 + 7x - 1 = 0$$

$$a=8, b=7, c=-1$$

$$x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$$

$$x = \frac{-(7) \pm \sqrt{(7)^2 - 4(8)(-1)}}{2(8)}$$

$$x = \frac{-7 \pm \sqrt{49 + 32}}{16}$$

$$x = \frac{-7 \pm \sqrt{81}}{16}$$

$$x = \frac{-7 \pm 9}{16}$$

$$x = \frac{-7-9}{16}$$

OR

$$x = \frac{-7+9}{16}$$

$$x = \frac{-16}{16}$$

OR

$$x = \frac{2}{16}$$

$$x = -1$$

$$\text{OR} \quad x = \frac{2(1)}{2(8)}$$
$$x = \frac{1}{8}$$

(169) Solve $(x+2)^2 = 9$

$$\sqrt{(x+2)^2} = \pm\sqrt{9}$$

$$x+2 = \pm 3$$

$$x+2 = -3 \quad \text{OR} \quad x+2 = 3$$

$$x+2-2 = -3-2 \quad \text{OR} \quad x+2-2 = 3-2$$

$$x = -5 \quad \text{OR} \quad x = 1$$

16.

(175) Solve $\sqrt{x+3} = 5$

$$(\sqrt{x+3})^2 = (5)^2$$

$$x+3 = 25$$

$$x+3-3 = 25-3$$

$$x = 22$$

(177) Solve $\sqrt{x+2} = 5$

$$\sqrt{x+2}-2 = 5-2$$

$$\sqrt{x} = 3$$

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

$$x = 9$$

(189) Solve for X

$$\begin{array}{r} x+y=50 \\ x-y=0 \\ \hline 2x=50 \\ \frac{2x}{2}=\frac{50}{2} \\ \hline x=25 \end{array}$$



(193) Graph $y = -2x + 4$

$$y = -2x + 4$$

$$y = -2(0) + 4$$

$$y = 0 + 4$$

$$y = 4$$

$$y = -2(1) + 4$$

$$y = -2 + 4$$

$$= 2$$

X	y
0	4
1	2

