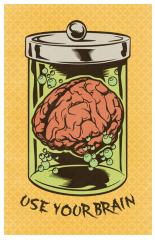
Warm Up Grade 8



Solve each equation. Verify the solution.

a) $-2x + 4 = 26$

$-2x + 4 \overset{-4}{=} 26 \overset{-4}{}$

$-2x = 22$

$\div -2 \quad \div (2)$

$x = -11$

b) $\frac{a}{3} = 6$

$3 \times \frac{a}{3} = 6 \times 3$

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

$a = 18$

c) $-3 = 2x + 15$

$-3 \overset{-15}{=} 2x + 15 \overset{-15}{}$

$-18 = 2x$

$\div 2 \quad \div 2$

$-9 = x$

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#11

11) a) $-8x + 11 = 59$

$-8x + 11 - 11 = 59 - 11$

$-8x = 48$

$\frac{-8x}{-8} = \frac{48}{-8}$

$x = -6$

LS: $-8x + 11$; $-8(-6) + 11$; $48 + 11$; 59

RS: 59

b) $11c + 21 = -34$

$11c + 21 - 21 = -34 - 21$ $[-34 + (-21)]$

$11c = -55$

$\frac{11c}{11} = \frac{-55}{11}$

$c = -5$

LS: $11c + 21$; $11(-5) + 21$; $-55 + 21$; -34

RS: -34

c) $23 = -5b + 3$

$23 - 3 = -5b + 3 - 3$

$20 = -5b$

$\frac{20}{5} = \frac{-5b}{5}$

$4 = -b$

$-4 = b$

LS: 23

RS: $-5b + 3$; $-5(-4) + 3$; $20 + 3$; 23

11d) $-45 = 6a - 15$

$6a - 15 = -45$

$6a - 15 + 15 = -45 + 15$

$6a = -30$

$\frac{6a}{6} = \frac{-30}{6}$

$a = -5$

LS: -45

RS: $6a - 15$; $6 \times (-5) - 15$; $-30 - 15$; -45

e) $52 = 25 - 9f$

$52 - 25 = 25 - 25 - 9f$

$27 = -9f$

$\frac{27}{-9} = \frac{-9f}{-9}$

$-3 = f$

LS: 52

RS: $25 - 9f$; $25 - 9(-3)$; $25 - (-27)$; $25 + 27$; 52

f) $-13 + 4d = 31$

$-13 + 13 + 4d = 31 + 13$

$4d = 44$

$\frac{4d}{4} = \frac{44}{4}$

$d = 11$

LS: $-13 + 4d$; $-13 + 4 \times 11$; $-13 + 44$; 31

RS: 31

12a) $3n + 7 = 8$ page 332 #12

$3n + 7 - 7 = 8 - 7$

$3n = 1$

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

$n = 1/3$ or $0.\overline{3}$

LS: $3n + 7$; $3 \times \frac{1}{3} + 7$; $1 + 7$; 8

RS: 8

b) $6x + 6 = 15$

$6x + 6 - 6 = 15 - 6$

$6x = 9$

$\frac{6x}{6} = \frac{9}{6}$

$x = 1.5$

LS: $6x + 6$; $6 \times 1.5 + 6$; $9 + 6$; 15

RS: 15

c) $-23 = 5p - 27$

$-23 + 27 = 5p - 27 + 27$

$4 = 5p$

$\frac{4}{5} = \frac{5p}{5}$

$0.8 = p$

LS: -23

RS: $5p - 27$; $5 \times (0.8) - 27$; $4 - 27$; -23

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d) $5p+6=7$

$5p+6-6=7-6$

$5p=1$

$\frac{5p}{5}=\frac{1}{5}$

$p=0.2$

LS: $5p+6$, $5\times0.2+6$, $1+6$, 7 RS: 7

e) $8e-9=-3$

$8e-9+9=-3+9$

$8e=6$

$\frac{8e}{8}=\frac{6}{8}$

$e=6/8$ or $3/4$ or 0.75

LS: $8e-9$, $8\times0.75-9$, $6-9$, -3 RS: -3

f) $-17+10g=-9$

$-17+10g+17=-9+17$

$10g=8$

$\frac{10g}{10}=\frac{8}{10}$

$g=\frac{8}{10}$ or $\frac{4}{5}$ or 0.8

LS: $-17+10g$, $-17+10\times0.8$, $-17+8$, -9 RS: -9

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13. n = yesterday's temp.

$2n+7=-3$

$2n+7-7=-3-7$ $[-3+(-7)]$

$2n=-10$

$\frac{2n}{2}=\frac{-10}{2}$

$n=-5$

LS: $2n+7$, $2\times-5+7$, $-10+7$, -3 RS: -3

Yesterday's temperature was $-5°C$.

Homework Sheet Extra Prac 2 # 1-7

Ex Prac

1a) $4x = 32$

$\frac{4x}{4} = \frac{32}{4}$

$x = 8$

LS: $4x$, 4×8, 32

RS: 32

b) $-35 = -5x$

$\frac{-35}{-5} = \frac{-5x}{-5}$

$7 = x$

LS: -35

RS: $-5x$, -5×7, -35

c) $-48 = 8x$

$\frac{-48}{8} = \frac{8x}{8}$

$-6 = x$

LS: -48

RS: $8x$, 8×-6, -48

d) $9x = 54$

$\frac{9x}{9} = \frac{54}{9}$

$x = 6$

LS: $9x$, 9×6, 54

RS: 54

2a) $-8a + 11 = 27$

$-8a + 11 - 11 = 27 - 11$

$-8a = 16$

$\frac{-8a}{-8} = \frac{16}{-8}$

$a = -2$

LS: $-8a + 11$, $-8 \times -2 + 11$, $16 + 11$, 27

RS: 27

b) $12b + 21 = 93$

$12b + 21 - 21 = 93 - 21$

$12b = 72$

$\frac{12b}{12} = \frac{72}{12}$

$b = 6$

LS: $12b + 21$, $12 \times 6 + 21$, $72 + 21$, 93

RS: 93

c) $-42 = 5c - 27$

$-42 + 27 = 5c - 27 + 27$

$-15 = 5c$

$\frac{-15}{5} = \frac{5c}{5}$

$-3 = c$

LS: -42

RS: $5c - 27$, $5 \times -3 - 27$, $-15 - 27$, -42

d) $6b - 15 = -45$

$6b - 15 + 15 = -45 + 15$

$6b = -30$

$\frac{6b}{6} = \frac{-30}{6}$

$b = -5$

LS: $6b - 15$, $6 \times -5 - 15$, $-30 - 15$, -45

RS: -45

3a) $2x-7=9$

$2x-7+7=9+7$

$2x=16$

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

$x=8$

LS: $2x-7$, $2\times8-7$, $16-7$, 9 RS: 9

b) $-4x+6=-14$

$-4x+6-6=-14-6$

$-4x=-20$

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

$x=5$

LS: $-4x+6$, $-4\times5+6$, $-20+6$, -14 RS: -14

c) $6x-7=-19$

$6x-7+7=-19+7$

$6x=-12$

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

$x=-2$

LS: $6x-7$, $6\times-2-7$, $-12-7$, -19 RS: -19

d) $-7x-8=13$

$-7x-8+8=13+8$

$-7x=21$

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

$x=-3$

LS: $-7x-8$, $-7\times-3-8$, $21-8$, 13 RS: 13

4 a) $2a+3=4$

$2a+3-3=4-3$

$2a=1$

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

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

LS: $2a+3$, $2\times\frac{1}{2}+3$, $1+3$, 4 RS: 4

b) $15=10+2b$

$15-10=10+2b-10$

$5=2b$

$\frac{5}{2}=\frac{2b}{2}$

$2.5=b$

LS: 15 RS: $10+2b$, $10+2\times2.5$, $10+5$, 15

c) $3=5c-6$

$3+6=5c-6+6$

$9=5c$

$\frac{9}{5}=\frac{5c}{5}$

$1.8=c$

LS: 3 RS: $5c-6$, $5\times1.8-6$, $9-6$, 3

d) $9f-7=1$

$9f-7+7=1+7$

$9f=8$

$\frac{9f}{9}=\frac{8}{9}$

$f=0.\overline{8}$

$\frac{9}{1}\times\frac{8}{9}=\frac{72}{9}=8$

LS: $9f-7$, $9\times\frac{8}{9}-7$, $8-7$, 1 RS: 1

5a) n = the number

$2n + 5 = 17$

$2n + 5 - 5 = 17 - 5$

$2n = 12$

$\frac{2n}{2} = \frac{12}{2}$

$n = 6$

The number is 6.

LS	RS
$2n+5$	17
$2\times6+5$	
$12+5$	
17	

b) n = the number

$5n - 6 = 29$

$5n - 6 + 6 = 29 + 6$

$5n = 35$

$\frac{5n}{5} = \frac{35}{5}$

$n = 7$

The number is 7.

LS	RS
$5n-6$	29
$5\times7-6$	
$35-6$	
29	

6. a = number of students who attended

$13a + 125 = 944$

$13a + 125 - 125 = 944 - 125$

$13a = 819$

$\frac{13a}{13} = \frac{819}{13}$

$a = 63$

LS	RS
$13a+125$	944
$13\times63+125$	
$819+125$	
944	

63 students attended

7. If it cost $225 for the class to go skating and they have to pay $150 for ice rental and $3 for skate rental, how many students skated?

s = # who skated

$3s + 150 = 225$

$3s + 150 - 150 = 225 - 150$

$3s = 75$

$\frac{3s}{3} = \frac{75}{3}$

$s = 25$

25 students skated.

a) Which number could you multiply $\frac{5}{9}$ by to get the product 5?

$\frac{5}{9} \times \boxed{\frac{9}{1}} = 5$ ← $\frac{45}{9}$

b) Which number could you multiply $\frac{4}{7}$ by to get the product 4?

Sarah shares a bag of candy with her friend Emma so that each of them get 15 candy. How much candy did the bag contain?

let x ≡ Candy in bag

a)Write an equation that you can use to solve the problem

let b represent the number of candy in the bag originally

b) solve $\frac{b}{2} = 15$

$2 \times \frac{b}{2} = 15 \times 2$

$b = 30$

OR $\frac{2}{1} \times \frac{b}{2} = 15 \times 2$

$\frac{2b}{2} = 30$

$1b = 30$

c) verify

Example 1)

Grandma has enough money to give the same amount to her five grandchildren.
After Grandma gives them the money, each grandchild has $25 . How much money did Grandma have to start?
a) Write an equation to represent this problem.
b) Solve the equation.
c) Verify the solution.

let x = the money grandma starts with

$$\frac{x}{5} = \$25$$

$$5 \times \frac{x}{5} = 25 \times 5$$

$$x = \$125$$

Grandma had $125 to start with.

Example 2)

The school's student council sold T-shirts for charity. The council bought the T-shirts in boxes of 40. The student council added $6 to the cost of each T-shirt. Each T-shirt sold for $26. What did the student council pay for 1 box of T-shirts?

40 Tshirt
$6 x 40
$240

let x = cost of 1 box of T-shirts

a) Write an equation to represent this problem then solve the equation.

$$\frac{x}{40} + 6 = 26$$

$\frac{x}{40}$: original price of 1 t-shirt

B) Verify the solution

$$\frac{x}{40} + 6 - 6 = 26 - 6$$

$$\frac{x}{40} = 20$$

$$40 \times \frac{x}{40} = 20 \times 40$$

$$x = 800$$

The cost of the box of t-shirt is $800.

add to your notes (variable on the bottom)

$\frac{3}{x} + 7 = -5$ (−7 on both sides)

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

$3 = -12x$

$\div(-12)$ $\div(-12)$

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

$\frac{-1}{4} = x$

Class/Homework

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#3(ac), #4(a,c), #5, #6, #7

one-quarter is ÷ by 4

$\frac{x}{4} = 8$