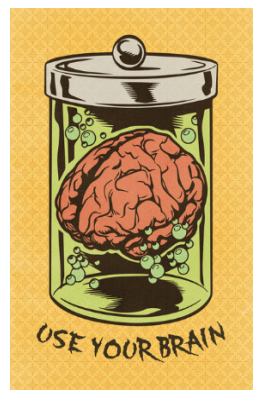
Warm Up Grade 8



Solve each equation. Verify the solution.

a) $-2x + 4 = 26$

$-2x + 4 - 4 = 26 - 4$

$-2x = 22$

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

$x = -11$

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

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

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

$a = 18$

c) $-3 = 2x + 15$

$-3 - 15 = 2x + 15 - 15$

$-18 = 2x$

$\div 2 \quad \div 2$

$-9 = x$

#11

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

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

$-8x=48$

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

$x=-6$

LS

$-8x+11$

$-8x-6+11$

$48+11$

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

$11c+21$

$11x-5+21$

$-55+21$

-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

$-5b+3$

$-5x-4+3$

$20+3$

23

d) $-45 = 6a - 15$

$6a - 15 = -45$

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

$6a = -30$

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

$a = -5$

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

12 a) $3n+7=8$

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

$3n=1$

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

$n=1/3$ 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

$6x+6$

$6\times1.5+6$

$9+6$

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

13. n = yesterday's temp.

$$2n + 7 = -3$$
$$2n + 7 - 7 = -3 - 7$$
$$2n = -10$$
$$\frac{2n}{2} = \frac{-10}{2}$$
$$n = -5$$

[$-3 + (-7)$]

LS
$2n + 7$
$2(-5) + 7$
$-10 + 7$
-3

RS
-3

Yesterday's temperature was $-5^{\circ}C$.

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

$-8a+11$

$-8(-2)+11$

$16+11$

27

RS

27

b) $12b+21=93$

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

$12b=72$

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

$b=6$

LS

$12b+21$

$12\times6+21$

$72+21$

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) $6f-15=-45$

$6f-15+15=-45+15$

$6f=-30$

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

$f=-5$

LS

$6f-15$

$6\times-5-15$

$-30-15$

-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) $9f-7=1$

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

$9f=8$

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

$f=0.\overline{8}$

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

$=8$

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

RS
1

5a) n = the number

$2n+5=17$

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

$2n=12$

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

$n=6$

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

The number is 6.

b) n = the number

$5n-6=29$

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

$5n=35$

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

$n=7$

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

The number is 7.

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
$13a + 125$
$13 \times 63 + 125$
$819 + 125$
944

RS
944

63 students attended

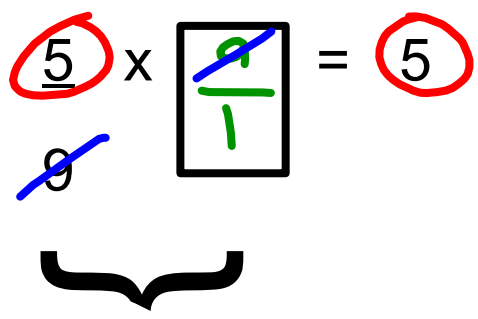
7. If it cost $225 for the class to go skating and they have to pay $150 for ice rental and $3 for skate rental, how many students skated?

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?



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

Add to notes

$\frac{f}{-8} = -7$

$(-8) \times \frac{f}{-8} = -7 \times (-8)$

$f = 56$

$\frac{w}{4} + 6 = 1$

$\frac{w}{4} + 6 - 6 = 1 - 6$

$\frac{w}{4} = -5$

$(4) \times \frac{w}{4} = -5 \times (4)$

$w = -20$

$\frac{p}{4} - 10 = 15$

$\frac{p}{4} - 10 + 10 = 15 + 10$

$\frac{p}{4} = 25$

$4 \times \frac{p}{4} = 25 \times 4$

$p = 100$

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 $x \equiv$ how much candy is in the bag.

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

let x represent the number of candy in the bag originally

$$\frac{x}{2} = 15$$

b) solve

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

$$x = 30$$

There was 30 candies in the bag.

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 = how much money Grandma had to start

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

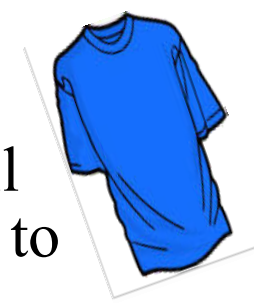
Grandma had $125 to start with.

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

$$x = \$125$$

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?



Let x = cost for 1 box

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

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

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

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

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

B) Verify the solution

$$x = 800$$

It will cost $800 for a box of t-shirts.

add to your notes (variable on the bottom)

$\frac{3}{x} + 7 = -5$

$\frac{3}{x} + 7 - 7 = -5 - 7$

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

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

$3 = 12x$

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

$0.25 = x$

Class/Homework

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

/10

Check

3. Solve each equation.
Verify the solution.

a) $\frac{t}{5} = 6$ **b)** $\frac{a}{7} = 8$

c) $\frac{b}{6} = 3$ **d)** $\frac{c}{3} = 9$

4. Solve each equation.
Verify the solution.

a) $\frac{d}{-4} = 5$ **b)** $\frac{f}{8} = -5$

c) $\frac{k}{9} = -4$ **d)** $\frac{m}{-5} = -7$

5. One-quarter of the golf balls in the bag are yellow.
There are 8 yellow golf balls.
How many golf balls are in the bag?

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

b) Solve the equation.

c) Verify the solution.

6. For each sentence, write an equation.
Solve the equation to find the number.

a) A number divided by 6 is 9.

b) A number divided by -4 is -3.

c) A number divided by -5 is 7.

7. Solve each equation.
Verify the solution.

a) $\frac{n}{4} + 3 = 10$ **b)** $\frac{m}{3} - 2 = 9$

c) $13 + \frac{x}{2} = 25$ **d)** $-9 + \frac{s}{2} = 2$

Apply

8. Solve each equation.
Verify the solution.

a) $\frac{p}{-3} + 9 = 3$ **b)** $\frac{t}{-6} + 12 = 18$

c) $-24 + \frac{w}{5} = -29$ **d)** $-17 + \frac{e}{-7} = -8$

9. For each sentence, write an equation.
Solve the equation to find the number.

a) Add 1 to a number divided by -3 and the sum is 6.

b) Subtract a number divided by 9 from 3 and the difference is 0.

c) Add 4 to a number divided by -2 and the sum is -3.

10. One-half of the team's supply of baseballs was taken from the dressing room to the dugout. During the game, 11 baseballs were caught by fans. At the end of the game, there were 12 baseballs left in the dugout. What was the team's original supply of baseballs?

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

b) Solve the equation.

c) Verify the solution.