

Stations One: Conversions

KHDBDCM

When do you multiply when converting?

WHEN MOVING TO THE RIGHT

M(1760) Y(3) F(12) IN

Q(4) Q(2) P(2) C(8) O

When do you divide when converting?

WHEN MOVING TO THE LEFT

1) 22 cups is how many pints? $22 \div 2 = 11$ pints	2) 50 L = <u>50,000</u> mL $50 \times 10 \times 10 \times 10$
3) Jessica is 54 inches tall, how many feet tall is she? $54 \div 12 = 4.5$ ft	4) 10 m is how many km? $10 \div 10 \div 10 \div 10 = .01$ km
5) How many kiloliters are 500 Liters? $500 \text{ L} \div 10 \div 10 \div 10 = .5$ L	6) How many cups are in 192 gallons? $192 \times 4 \times 2 \times 2 = 3072$ cups
7) 10 cm = <u>.1</u> m $\div 10 \div 10$	8) Convert 28 meters in centimeters $28 \times 10 \times 10 = 2,800$ cm
9) How many feet are in 144 yards? $144 \text{ y} \times 3 = 432$ ft	10) 34 pints = <u>17</u> quarts $34 \div 2$
11) Convert 28 gallons in quarts $28 \div 4 = 7$ quarts	12) There are how many cm in 3 m? $3 \times 10 \times 10 = 3000$ cm

13) How many DAYS will you spend in this class this semester? (assume each class is 90 minutes and there are 94 class days)

$$90 \text{ min} \times 94 = 8460 \text{ minutes} \div 60 = 141 \text{ hours} \div 24 = 5.875 \text{ days!}$$

Station Two: Radicals

- 1) When adding/ subtracting radicals the number under the radical must be the same
TRUE
- 2) When multiplying radicals the number under the radical must be the same
FALSE
- 3) When multiplying radicals the numbers outside the radical are added together
FALSE
- 4) When adding/subtracting radicals the numbers on the inside of the radical are added together
FALSE
- 5) When adding/subtracting radicals the numbers on the outside of the radical are added together
TRUE

For each of the following determine

a) if it is an adding/subtracting problem or a multiplication problem (circle one)

b) simplify the problem

<p>6) $\sqrt{100x^2}$ (Simplify) (Multiply) (add/sub)</p> <div style="display: flex; justify-content: space-around;"> <div style="text-align: center;"> $\begin{array}{c} \wedge \\ 2 \ 50 \\ \wedge \\ 2 \ 25 \\ \wedge \\ 5 \ 5 \end{array}$ </div> <div style="text-align: center;"> $\begin{array}{c} (2 \cdot 2 \cdot 5 \cdot 5 \cdot x \cdot x) \\ \hline (10x) \end{array}$ </div> </div>	<p>7) $-4\sqrt{120x^4}$ (Simplify) (Multiply) (add/sub)</p> <div style="display: flex; justify-content: space-around;"> <div style="text-align: center;"> $\begin{array}{c} \wedge \\ 2 \ 60 \\ \wedge \\ 2 \ 30 \\ \wedge \\ 2 \ 15 \\ \wedge \\ 5 \ 3 \end{array}$ </div> <div style="text-align: center;"> $\begin{array}{c} -4 \sqrt{(2 \cdot 2 \cdot 2 \cdot 3 \cdot 5 \cdot x \cdot x \cdot x \cdot x)} \\ \hline (-8x^2\sqrt{30}) \end{array}$ </div> </div>
<p>8) $\sqrt{90} + \sqrt{40}$ (Simplify) (Multiply) (add/sub)</p> <div style="display: flex; justify-content: space-around;"> <div style="text-align: center;"> $\begin{array}{c} \wedge \\ 2 \ 45 \\ \wedge \\ 5 \ 9 \\ \wedge \\ 3 \ 3 \end{array}$ </div> <div style="text-align: center;"> $\begin{array}{c} \wedge \\ 2 \ 20 \\ \wedge \\ 2 \ 10 \\ \wedge \\ 2 \ 5 \end{array}$ </div> </div> <p>$2 \cdot 3 \cdot 3 \cdot 5 \quad 2 \cdot 2 \cdot 5$</p> <p>$3\sqrt{10} + 2\sqrt{10} = (5\sqrt{10})$</p>	<p>9) $5\sqrt{6} + \sqrt{6}$ (Simplify) (Multiply) (add/sub)</p> <p style="text-align: center; font-size: 1.5em;">$6\sqrt{6}$</p>
<p>10) $-4\sqrt{6} \cdot \sqrt{6}$ (Simplify) (Multiply) (add/sub)</p> <div style="display: flex; justify-content: space-around;"> <div style="text-align: center;"> $\begin{array}{c} -4\sqrt{26} \\ \wedge \\ 2 \ 18 \\ \wedge \\ 2 \ 9 \\ \wedge \\ 3 \ 3 \end{array}$ </div> <div style="text-align: center;"> $\begin{array}{c} -4 \sqrt{(2 \cdot 2 \cdot 3 \cdot 3)} \\ \hline (-24) \end{array}$ </div> </div>	<p>11) $4\sqrt{20} \cdot \sqrt{10}$ (Simplify) (Multiply) (add/sub)</p> <div style="display: flex; justify-content: space-around;"> <div style="text-align: center;"> $\begin{array}{c} 4\sqrt{200} \\ \wedge \\ 2 \ 100 \\ \wedge \\ 2 \ 50 \\ \wedge \\ 2 \ 25 \\ \wedge \\ 5 \ 5 \end{array}$ </div> <div style="text-align: center;"> $\begin{array}{c} 4 \sqrt{(2 \cdot 2 \cdot 2 \cdot 5 \cdot 5)} \\ \hline (40\sqrt{2}) \end{array}$ </div> </div>
<p>12) $-3\sqrt{98x^4}$ (Simplify) (Multiply) (add/sub)</p> <div style="display: flex; justify-content: space-around;"> <div style="text-align: center;"> $\begin{array}{c} \wedge \\ 2 \ 49 \\ \wedge \\ 7 \ 7 \end{array}$ </div> <div style="text-align: center;"> $\begin{array}{c} (-21x^2\sqrt{2}) \end{array}$ </div> </div> <p>$-3\sqrt{2 \cdot 7 \cdot 7 \cdot x \cdot x \cdot x \cdot x}$</p>	<p>13) $\sqrt{45} + \sqrt{20}$ (Simplify) (Multiply) (add/sub)</p> <div style="display: flex; justify-content: space-around;"> <div style="text-align: center;"> $\begin{array}{c} \wedge \\ 5 \ 9 \\ \wedge \\ 3 \ 3 \end{array}$ </div> <div style="text-align: center;"> $\begin{array}{c} \wedge \\ 2 \ 10 \\ \wedge \\ 2 \ 5 \end{array}$ </div> </div> <p>$3\sqrt{5} + 2\sqrt{5} = (5\sqrt{5})$</p>

Stations 3: Solving Equations- SHOW WORK

1) $7x - 28 = 8x - 14$

$$\begin{array}{r} -8x \\ -x - 28 = -14 \\ +28 +28 \end{array}$$

$$-x = 14$$

$$x = -14$$

2) $7x - 5 = 8(x + 3)$

$$\begin{array}{r} 7x - 5 = 8x + 24 \\ -8x -8x \end{array}$$

$$\begin{array}{r} -x - 5 = 24 \\ +5 +5 \end{array}$$

$$-x = 29$$

$$x = -29$$

3) $3(5x + 4) - 20 = 13x - 4$

$$15x + 12 - 20 = 13x - 4$$

$$\begin{array}{r} 15x - 8 = 13x - 4 \\ -13x -13x \end{array}$$

$$\begin{array}{r} 2x - 8 = -4 \\ +8 +8 \end{array}$$

$$2x = 4$$

$$x = 2$$

4) $-17 = 2x - 3$

$$\begin{array}{r} +3 +3 \end{array}$$

$$\begin{array}{r} -14 = 2x \\ \frac{-14}{2} = \frac{2x}{2} \end{array}$$

$$x = -7$$

5) $8x - 15x = -44 - 12$

$$\begin{array}{r} -7x = -56 \\ \div \div \end{array}$$

$$x = 8$$

6) $25 = -3(x - 7) - x$

$$25 = -3x + 21 - x$$

$$\begin{array}{r} 25 = -4x + 21 \\ -21 -21 \end{array}$$

$$4 = -4x$$

$$x = -1$$

7) $-6 + 8 + 4 = 2p - 3p + 3$

$$\begin{array}{r} 6 = -p + 3 \\ -3 -3 \end{array}$$

$$3 = -p$$

$$p = -3$$

8) $-5(-6x + 5) = -85$

$$30x - 25 = -85$$

$$30x = -60$$

$$x = -2$$

9) $4 - 4(1 + 6a) = 192$

$$4 - 4 + 24a = 192$$

$$24a = 192$$

$$a = 8$$

10) $-5x - 20 = -(3x + 8)$

$$\begin{array}{r} -5x - 20 = -3x - 8 \\ +3x +3x \end{array}$$

$$\begin{array}{r} -2x - 20 = -8 \\ +20 +20 \end{array}$$

$$-2x = 12$$

$$x = -6$$

Station 4: Writing Expressions and Combining like terms

1. $6 + 4x + 2x + 3$ $6x + 9$	2. $-9m - 6 - 8m$ $-17m - 6$
3. $x + 5 + 5x + 4$ $6x + 9$	4. $9 - 17y + 5 + 6y$ $-11y + 14$
5. $-9n + n - 5 + 6$ $-8n - 1$	6. $6x - 2 + 3x$ $9x - 2$
7. $-2d - 7 + 2 + 6d$ $4d - 5$	8. $x + x + 1$ $2x + 1$

9. The difference of a number and four $n - 4$	10. Twice a number increased by 16 $2x + 16$
11) 18 less than the product of four and a number is equal to twice the number $4x - 18 = 2x$	12) The quotient of five and a number increased by four $\frac{5}{n} + 4$
13) The difference of 13 and a number $13 - n$	14) The sum of five and a number divided by two is 27 $\frac{5 + n}{2} = 27$
15) Gary makes six dollars less than twice what Mary makes. Write an expression that represents this. $2m - 6 = g$	