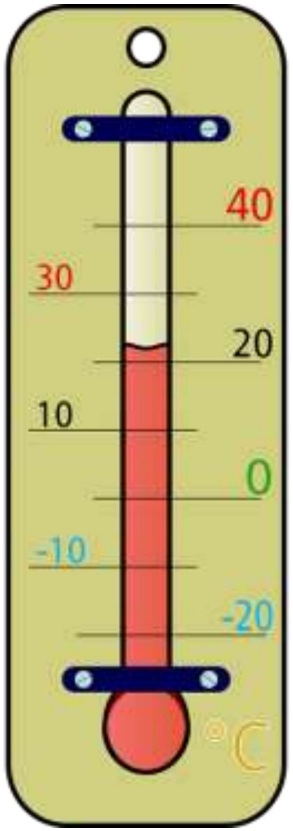
# Did you know?

This is a well known formula that you might recognise.

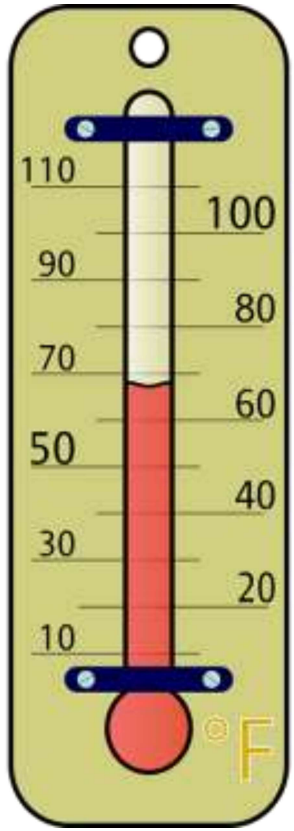



$$F = \frac{9}{5}C + 32$$

It is used to change temperatures in degrees Celsius °C to degrees Fahrenheit °F

For example: If it is 20°C to find the temperature in °F you simply substitute C=20 into the formula above:

68°F




What would I need to do if I wanted to convert from Fahrenheit to Celsius??

# Rearranging 1

1. Solve $3x + 25 = 60$

2. Rearrange $z = w + 3$ to make $w$ the subject

3. Rearrange $5x - 4 = 2y$ to make $x$ the subject

4. Rearrange $y = \frac{t}{6}$ to make $t$ the subject

5. $y = 6p^2 + 2$ rearrange to make $p$ the subject

6. The area of a circle is found using $A = \pi r^2$ Write the equation you would use to find the radius.

7. In a right angled triangle $sinx = \frac{Opp}{Hyp}$ write down the equation for finding the opposite side.

8. To change temperatures in Celsius to Fahrenheit this formula is used.

$$F = \frac{9}{5}C + 32$$

Rearrange to give the formula for converting Celsius to Fahrenheit

# Rearranging 1

Solutions on the next slide….

# Rearranging 1 Solutions

1. Solve $3x + 25 = 60$ →

$$3x = 60 - 25$$
$$3x = 35$$
$$x = \frac{35}{3}$$

2. Rearrange $z = w + 3$ to make $w$ the subject →

$$z - 3 = w$$
$$or\ w = z - 3$$

3. Rearrange $5x - 4 = 2y$ to make $x$ the subject →

$$5x = 2y + 4$$
$$x = \frac{2y + 4}{5}$$

4. Rearrange $y = \frac{t}{6}$ to make $t$ the subject →

$$6y = t$$
$$or\ t = 6y$$

Unsure about any of these? Search Rearranging Formulae. Next try Skills check 2….

# Rearranging 1 Solutions

5. $y = 6p^2 + 2$ rearrange to make $p$ the subject

$$y - 2 = 6p^2 \qquad p^2 = \frac{y-2}{6}$$

$$p = \pm\sqrt{\frac{y-2}{6}}$$

6. The area of a circle is found using $A = \pi r^2$ Write the equation you would use to find the radius.

$$\frac{A}{\pi} = r^2 \qquad r = \sqrt{\frac{A}{\pi}}$$

7. In a right angled triangle $sinx = \frac{Opp}{Hyp}$ write down the equation for finding the opposite side.

$$Opp = Hyp \times sinx$$

8. To change temperatures in Celsius to Fahrenheit this formula is used.

$$F = \frac{9}{5}C + 32$$

Rearrange to give the formula for converting Celsius to Fahrenheit

$$F = \frac{9}{5}C + 32$$

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

$$5(F - 32) = 9C$$

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

Unsure about any of these? Search Rearranging Formulae. Next try Skills check 2….

# Rearranging 2

1. Make $x$ the subject of $x - f = y + b$

2. Make $y$ the subject $ty - x^2 = b$

3. Make $c$ the subject $ac + d = m^2$

4. Make $a$ the subject $x(a - e) = d$

5. Make $y$ the subject $b(y - b) = b^2$

6. To find velocity, $v$, we use the formula
$$v^2 = u^2 + 2as$$
Rearrange to find $s$

7. The area of a sector of a circle is given by $A = \frac{\theta \pi r^2}{360}$ Express $\theta$ in terms of $A, \pi$ and $r$

8. Make $x$ the subject $m(y - x) = t$

# Rearranging 2

Solutions on the next slide….

# Rearranging 2 Solutions

1. Make $x$ the subject of $x - f = y + b$ → $x = y + b + f$

2. Make $y$ the subject $ty - x^2 = b$ →
$$ty = b + x^2$$
$$y = \frac{b + x^2}{t}$$

3. Make $c$ the subject $ac + d = m^2$ →
$$ac = m^2 - d$$
$$c = \frac{m^2 - d}{a}$$

4. Make $a$ the subject $x(a - e) = d$ →
$$xa - xe = d$$
$$xa = d + xe$$
$$a = \frac{d + xe}{x}$$
or
$$a - e = \frac{d}{x}$$
$$a = \frac{d}{x} + e$$

Can you see that these are equivalent?

# Rearranging 2 Solutions

5. Make $y$ the subject $b(y - b) = b^2$

$$by - b^2 = b^2$$
$$by = 2b^2$$
$$y = 2b$$

Solution

6. To find velocity, $v$, we use the formula
$v^2 = u^2 + 2as$
Rearrange to find $s$

$$v^2 - u^2 = 2as$$
$$s = \frac{v^2 - u^2}{2a}$$

7. The area of a sector of a circle is given by $A = \frac{\theta\pi r^2}{360}$ Express $\theta$ in terms of $A, \pi$ and $r$

$$360A = \theta\pi r^2$$
$$\theta\pi r^2 = 360A$$
$$\theta = \frac{360A}{\pi r^2}$$

8. Make $x$ the subject $m(y - x) = t$

$$my - mx = t$$
$$my = t + mx$$
$$mx = my - t$$
$$x = \frac{my - t}{m}$$