

# Math Operations

Functions in Javascript

These are math functions in AppLab:



randomNumber(0, 10)



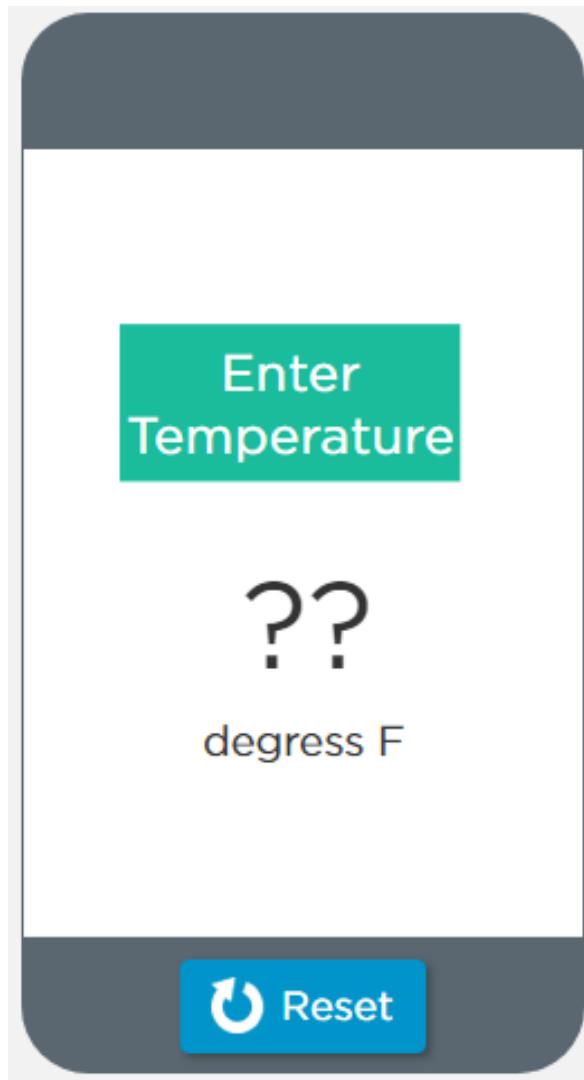
Math.round(0)



Math.abs(0)



Math.random()



studio.code.org says

Enter a temperature in degrees Celsius:

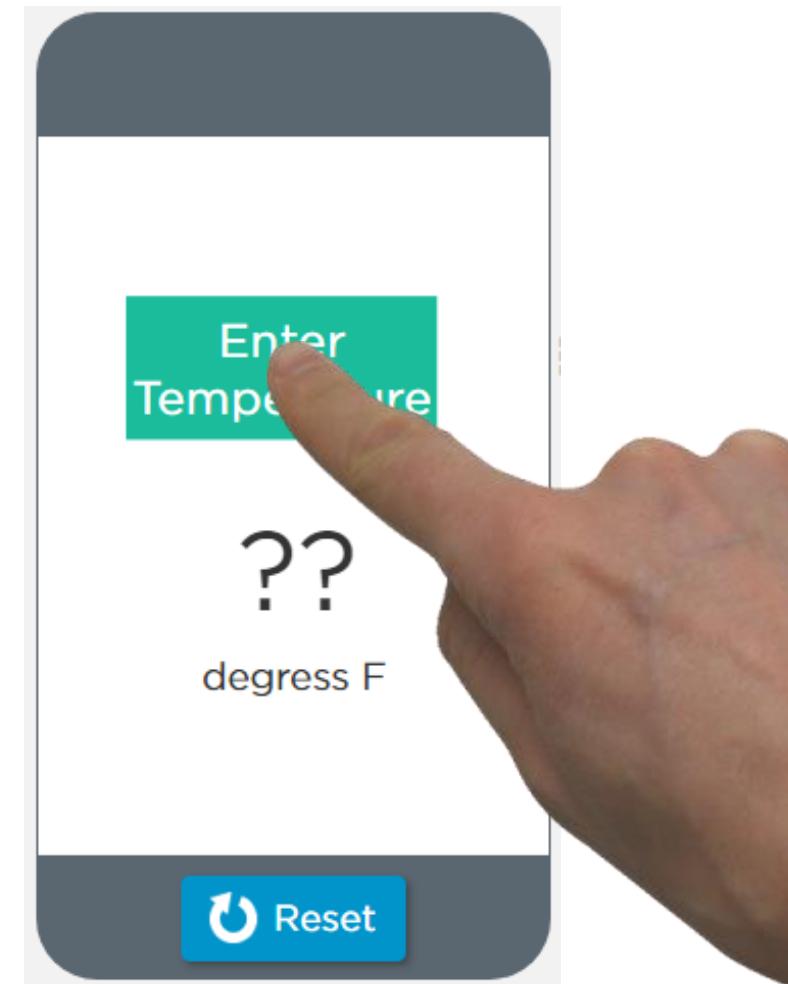
This app gets a temperature (Canadian) and converts it to the American scale.

89.6  
degress F

A central panel displays a message from studio.code.org, a text input field containing the number 32, and a descriptive paragraph about the app's function. To the right is another smartphone screen showing the converted temperature of 89.6 degrees Fahrenheit.

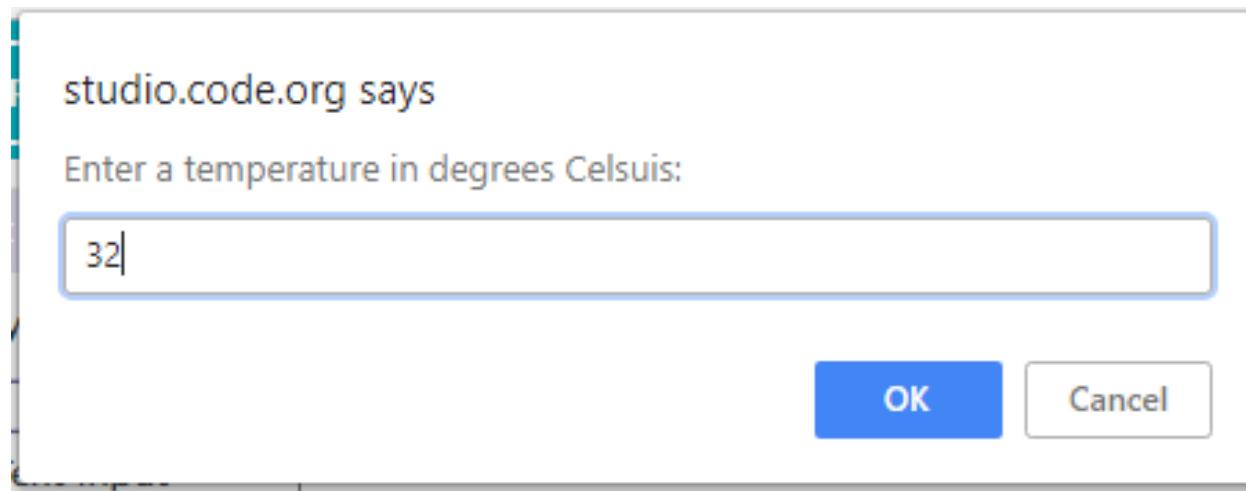
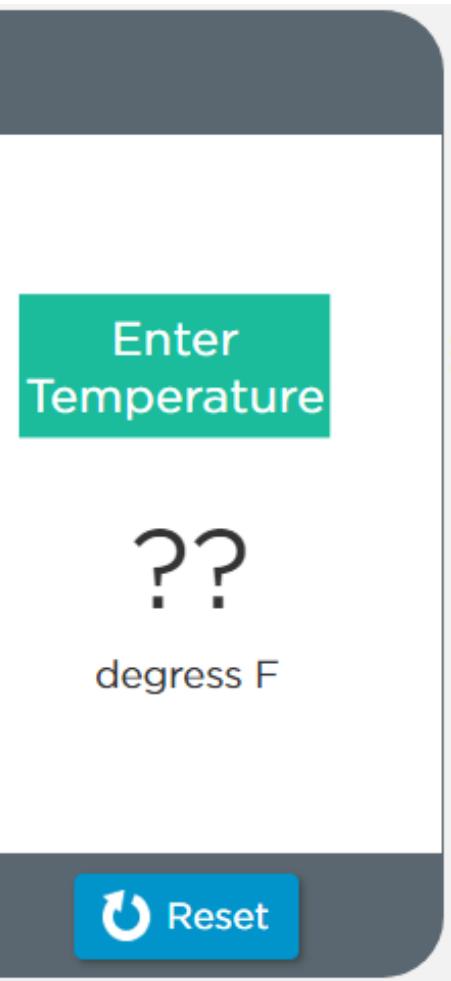
```
onEvent("temp", "click", function(event) {  
    var cel = promptNum("Enter a temperature in degrees Celsius:");  
    var fahr = (9 * cel / 5) + 32;  
    setText("ans", fahr);  
});
```

What is the id  
of the button  
that is clicked?



```
onEvent("temp", "click", function(event) {  
    var cel = promptNum("Enter a temperature in degrees Celsius:");  
    var fahr = (9 * cel) / 5 + 32;  
    setText("ans", fahr);  
});
```

cel 32  
fahr ?



```
onEvent("temp", "click", function(event) {  
    var cel = promptNum("Enter a temperature in degrees Celsius:");  
    var fahr = (9 * cel) / 5 + 32;  
    setText("ans", fahr);  
});
```

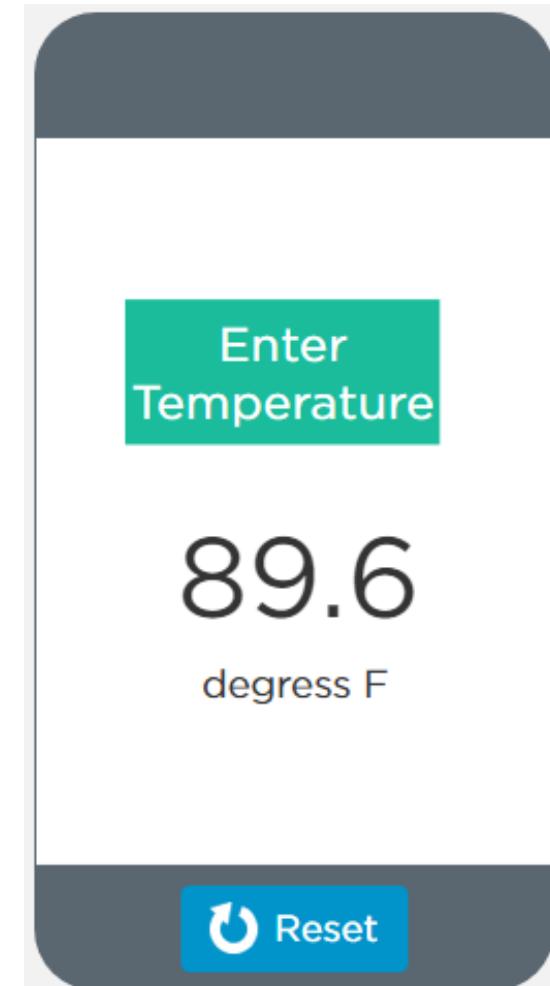
cel 32  
fahr 89.6



Which operation occurred first:  
\*, / or +?

```
onEvent("temp", "click", function(event) {  
    var cel = promptNum("Enter a temperature in degrees Celsius:");  
    var fahr = (9 * cel) / 5 + 32;  
    setText("ans", fahr);  
});
```

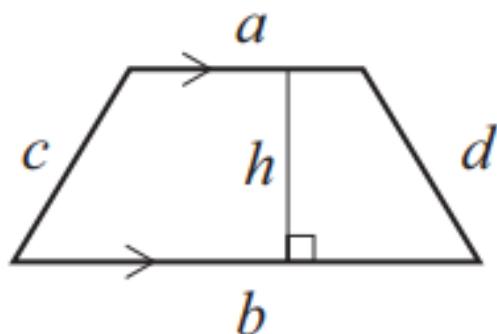
cel 32  
fahr 89.6



What is the name of the widget that got updated?

# Some EQAO formulas translated into AppLab

Trapezoid



$$P = a + b + c + d$$

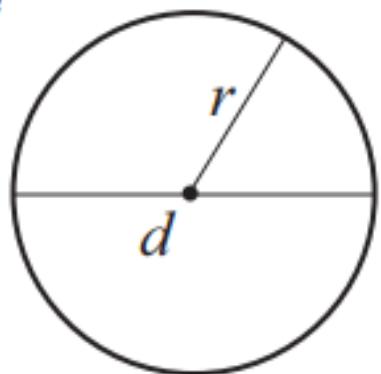
```
var P = [a+b+c+d];  
var P = a+b+c+d;
```

```
var A = [1/2*(a+b)*h];  
var A = 1/2*(a+b)*h;  

$$A = \frac{1}{2}(a + b)h$$

```

Circle



$$C = \pi d$$

or

$$C = 2\pi r$$

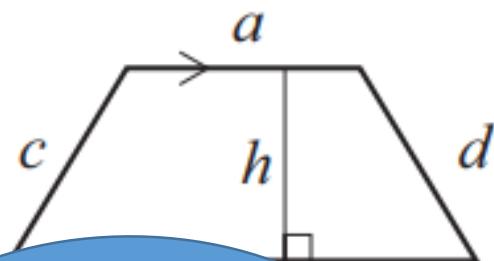
```
var C = [2*3.14159*r];  
var C = 2*3.14159*r;
```

$$A = \pi r^2$$

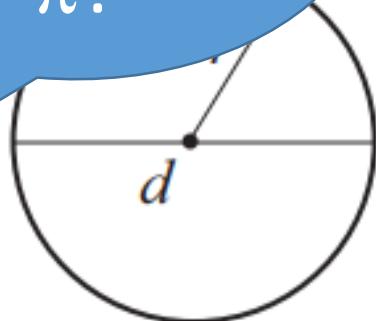
```
var A = [3.14159*x*x];  
var A = 3.14159*x*x;
```

# Some EQAO formulas translated into AppLab

Trapezoid



How do  
you write  
 $\pi$ ?



$$P = a + b + c + d$$

```
var P = [a+b+c+d];  
var P = a+b+c+d;
```

$$C = \pi d$$

or

$$C = 2\pi r$$

```
var C = [2*3.14159*r];  
var C = 2*3.14159*r;
```

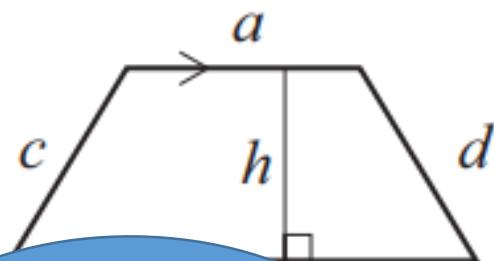
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var A = [1/2*(a+b)*h];  
var A = 1/2*(a+b)*h;  
A =  $\frac{1}{2}(a + b)h$ 
```

$$A = \pi r^2$$

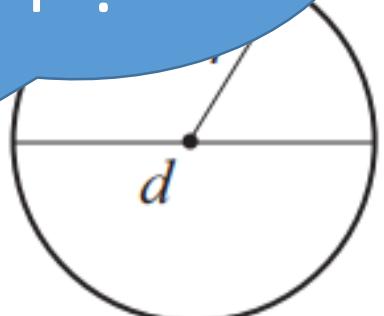
```
var A = [3.14159*x*x];  
var A = 3.14159*x*x;
```

# Some EQAO formulas translated into AppLab

Trapezoid



How do  
you write  
 $r^2$ ?



$$P = a + b + c + d$$

```
var P = [a+b+c+d];  
var P = a+b+c+d;
```

$$C = \pi d$$

or

$$C = 2\pi r$$

```
var C = [2*3.14159*r];  
var C = 2*3.14159*r;
```

```
var A = [1/2*(a+b)*h];
```

```
var A = 1/2*(a+b)*h;
```

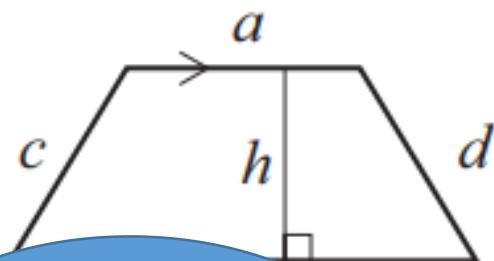
$$A = \frac{1}{2}(a + b)h$$

$$A = \pi r^2$$

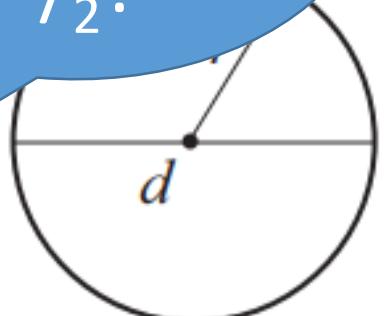
```
var A = [3.14159*x*x];  
var A = 3.14159*x*x;
```

# Some EQAO formulas translated into AppLab

Trapezoid



How do  
you write  
 $\frac{1}{2}$ ?



$$P = a + b + c + d$$

```
var P = [a+b+c+d];  
var P = a+b+c+d;
```

$$C = \pi d$$

or

$$C = 2\pi r$$

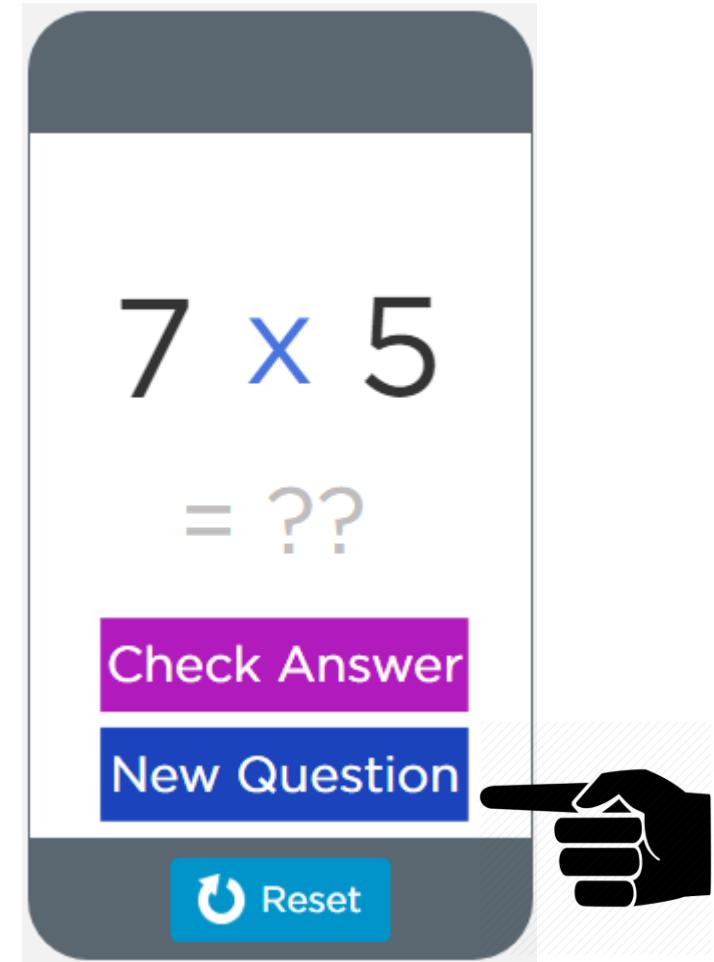
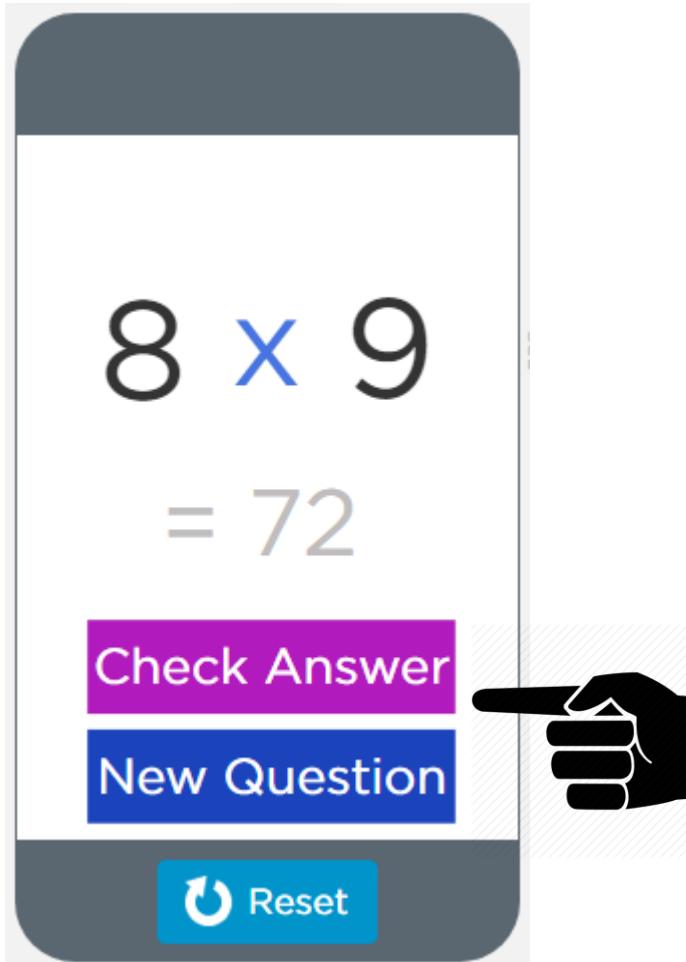
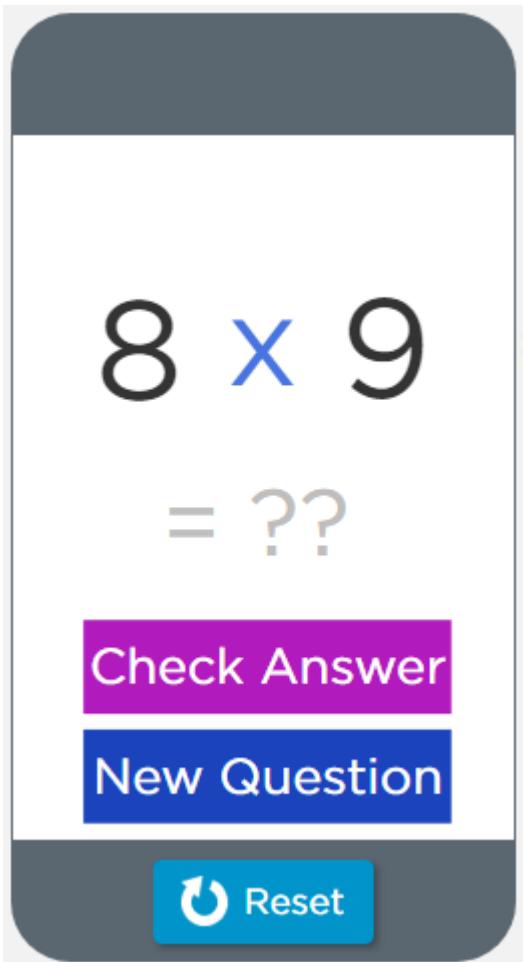
```
var C = [2*3.14159*r];  
var C = 2*3.14159*r;
```

```
var A = [1/2*(a+b)*h];  
var A = 1/2*(a+b)*h;  
A =  $\frac{1}{2}(a + b)h$ 
```

$$A = \pi r^2$$

```
var A = [3.14159*x*x];  
var A = 3.14159*x*x;
```

The Flashcard App allows you to practice your number facts.  
You think of the answer and check if you are right.



Another button allows you  
to get a new question.

$8 \times 9$

= ??

Check Answer

New Question

Reset

```
1 var n1 = 8;
2 var n2 = 9;
3 onEvent("check", "click", function() {
4     var ans = n1 * n2;
5     setText("answer", "= "+ans);
6 }
7
8 onEvent("newQ", "click", function(event) {
9     n1 = randomNumber(1, 9);
10    n2 = randomNumber(1, 9);
11    setText("number1", n1);
12    setText("number2", n2);
13    setText("answer", "= ??");
14 }
15 );
```

What two variables exist at the start?

n1 8

n2 9

What does ans  
become?

$$8 \times 9 \\ = ??$$

Check Answer

New Qu

Reset



```
1 var n1 = 8;  
2 var n2 = 9;  
3 onEvent("check", "click", function(event) {  
4     var ans = n1 * n2;  
5     setText("answer", "= "+ans);  
6 } );  
7  
8 onEvent("newQ", "click", function(event) {  
9     n1 = randomNumber(1, 9);  
10    n2 = randomNumber(1, 9);  
11    setText("number1", n1);  
12    setText("number2", n2);  
13    setText("answer", "= ??");  
14 } );
```

ans ?

n1 8

n2 9

$8 \times 9$

= ??

Check Answer

New Question

Reset

```
1 var n1 = 8;
2 var n2 = 9;

3 onEvent("check", "click", function(event) {
4     var ans = n1 * n2;
5     setText("answer", "= "+ans);
6 });

7
8 onEvent("newQ", "click", function(event) {
9     n1 = randomNumber(1, 9);
10    n2 = randomNumber(1, 9);
11    setText("number1", n1);
12    setText("number2", n2);
13    setText("answer", "= ??");
14});
```

ans 72

n1 8

n2 9

What widget is  
changed on  
the screen?

$8 \times 9$

$= 72$

Check Answer

New Question

Reset

```
1 var n1 = 8;
2 var n2 = 9;

3 onEvent("check", "click", function(event) {
4     var ans = n1 * n2;
5     setText("answer", "= "+ans);
6 }

7

8 onEvent("newQ", "click", function(event) {
9     n1 = randomNumber(1, 9);
10    n2 = randomNumber(1, 9);
11    setText("number1", n1);
12    setText("number2", n2);
13    setText("answer", "= ??");
14 }

15 );
```

ans 72

n1 8

n2 9

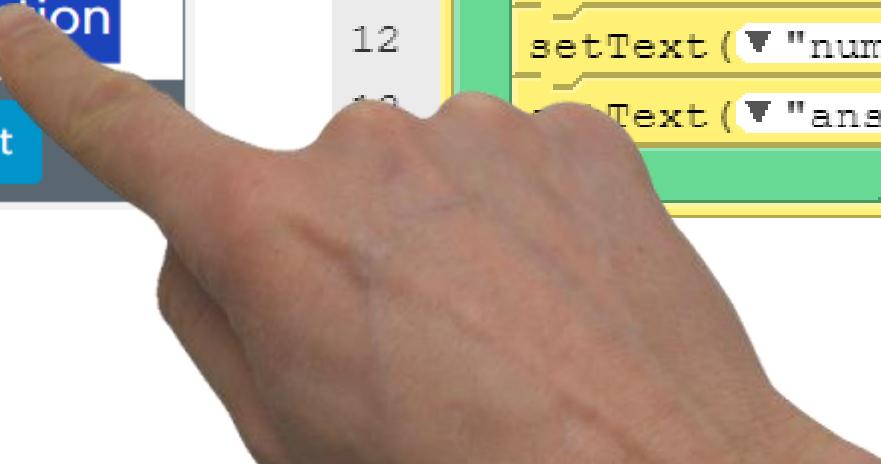
$8 \times 9$

= 72

Check Answer

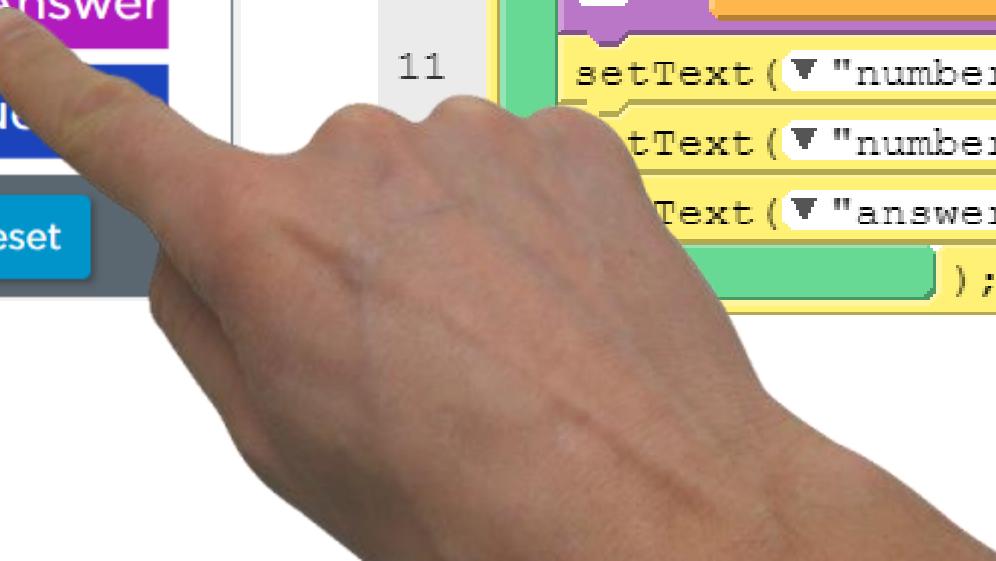
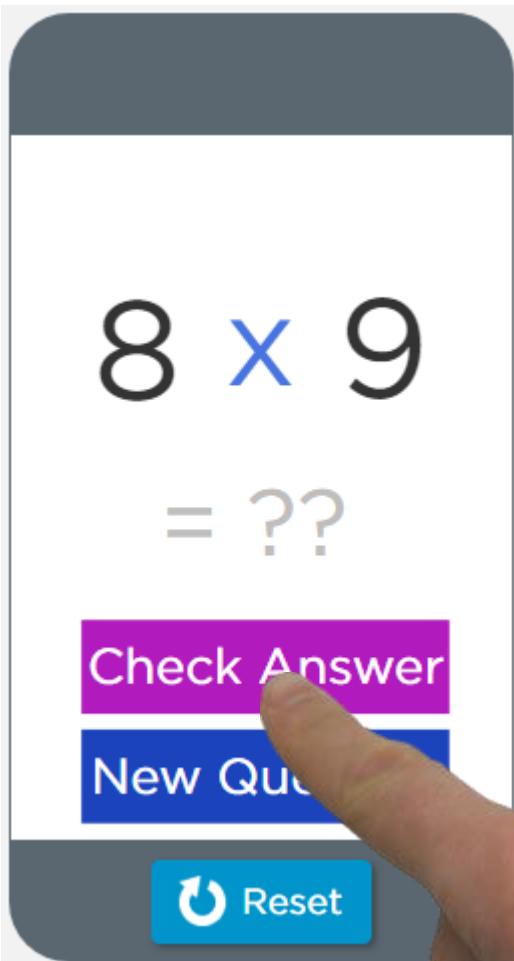
New Question

Reset



```
1 var n1 = 8;
2 var n2 = 9;
3 onEvent("check", "click", function(event) {
4     var ans = n1 * n2;
5     setText("answer", "= "+ans);
6 });
7
8 onEvent("newQ", "click", function(event) {
9     n1 = randomNumber(1, 9);
10    n2 = randomNumber(1, 9);
11    setText("number1", n1);
12    setText("number2", n2);
13    Text("answer", "= ??");
14});
```

n1 8  
n2 9



```
1 var n1 = 8;
2 var n2 = 9;
3 onEvent("check", "click", function(event) {
4     var ans = n1 * n2;
5     setText("answer", "= "+ans);
6 });
7
8 onEvent("newQ", "click", function(event) {
9     n1 = randomNumber(1, 9);
10    n2 = randomNumber(1, 9);
11    setText("number1", n1);
12    setText("number2", n2);
13    setText("answer", "= ??");
14});
```

ans

n1

8

n2

9

$8 \times 9$

$= 72$

Check Answer

New Question

Reset

```
1 var n1 = 8;
2 var n2 = 9;
3
4 onEvent("check", "click", function() {
5     var ans = n1 * n2;
6     setText("answer", "= "+ans);
7 })
8
9 onEvent("newQ", "click", function(event) {
10    n1 = randomNumber(1, 9);
11    n2 = randomNumber(1, 9);
12    setText("number1", n1);
13    setText("number2", n2);
14    setText("answer", "= ??");
15 })
```

n1 7

n2 5

What new values did the computer pick for n1 and n2?

$7 \times 5$

= ??

Check Answer

New Question

Reset

```
1 var n1 = 8;
2 var n2 = 9;
3 onEvent("check", "click", function() {
4     var ans = n1 * n2;
5     setText("answer", "= "+ans);
6 }
7
8 onEvent("newQ", "click", function(event) {
9     n1 = randomNumber(1, 9);
10    n2 = randomNumber(1, 9);
11    setText("number1", n1);
12    setText("number2", n2);
13    setText("answer", "= ??");
14 }
15 );
```

n1 7

n2 5

What three labels are changed on the screen?