Trial and Improvement (to do hard sums)

Your ÷ key is broken on your calculator.

Use your calculator to work out the missing digits:

5_ x 89 = 4984

6_ x 35 = 22_5

_2 x 65 = 4_30

Showing your working!

62x _4 = 45_8

8_ x 43 = 3_26

Showing all your working, work out:

1. 3_ x 62 = 22_2

2. _ 4 x 71 = 59_4

3. 59 x _1 = 12_9

36x62=2232

84x71=5964

59x21= 1239

Use your calculator to solve the fibonnaci strips.

goto starters and square nos
squares and roots worksheets

Using a systematic method solve the following problems:

23 x 5_ = 12_8

_2 x 69 = 289_

6_ x 28 =18_6

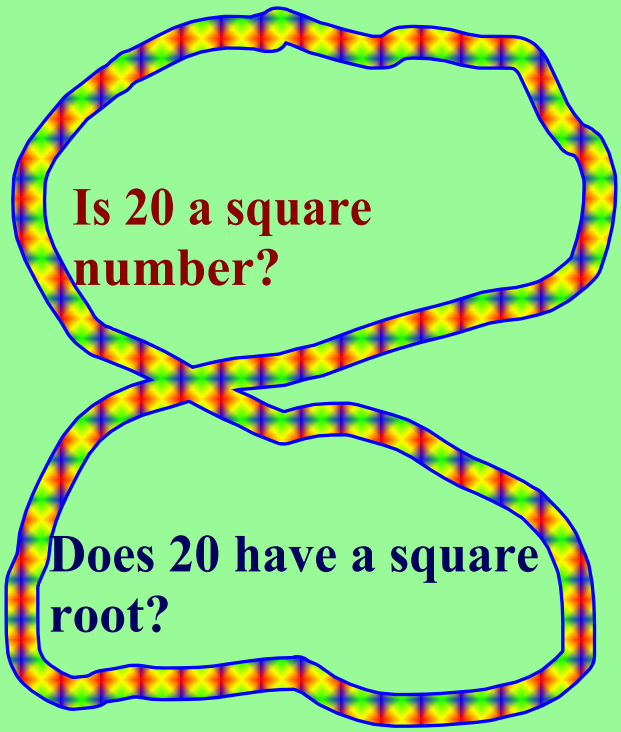
_7 x 36 = 169_

8_3 x 47 = 4056_

87 x 3_1 = 2792_

Use trial and improvement to solve these Fibonnaci strips

3	5	8	13	21	3	3+n 9+2n 21
7	8	15	23	38		6+n
2	3	5	8	13		15+2n = 21
8	2	10	12	22		2n = 6
10	5	15	20	35		n = 3
4	5					60
2	5	7	12	19	31	50
7			9			43
9				48		125
12						180



What do you know about the square root of 20?

Is 324 a square number?

Is 260 a square number?

Your $\sqrt{}$ key is broken on your calculator.

Using your calculator find out if these numbers have a square root that is a whole number.

$15^2 = 225$
$14^2 = 196$
$13^2 = 169$

187

$13.5^2 = 182.25$ ts
$13.8^2 = 190.44$ tb
$13.7^2 = 187.67$ tb
$13.65^2 = 186.3$ ts

361 $= 19^2$

to 1 dp

$40^2 = 1600$
$41^2 = 1687$
$41.5^2 = 1722$
$41.2^2 = 1701$
$41.1^2 = 1689.1$
$41.15^2 = 1693$ tb

1690

41.1^2

41.10
41.15

41.11
41.12
41.13
41.14

1296

9801

Find two numbers that differ by 1 and have a product of ....

1) 6 = 2x3
2) 56 = 7x8
3) 110 = 10x11
4) 182 = 13x14
5) 272 = 16x17
6) 462 = 21x22
7) 1190 = 34x35
8) 10100 = 100x101
9) 3192 = 56x57
10) 3540 = 59x60

1) 2 x 3=6
2) 6 x 7=56
3) 10 x11=110
4) 13 x14= 182
5) 16 x 17 = 272
6) 21x 22= 462
7) 34 x 35 = 1190
8) 100x 101=10100
9) 56 x 57= 3192
10) 59x 60 = 3540

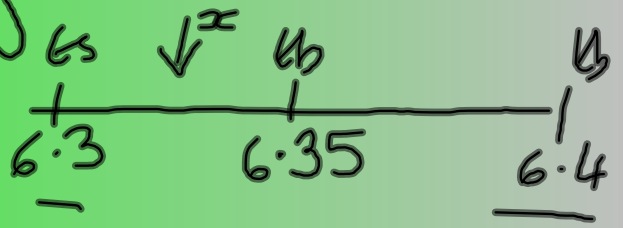
Using trial and improvement to solve equations

Solve the equation
$x^2 = 40$ to 1 dp using trial and improvement.

x	x^2	40
6	36	too small
7	49	too big
6.5	42.25	tb
6.3	39.69	ts
6.4	40.96	tb
6.35	40.3	tb

(1)
$x = 6.3$

in between



Solve the equation
$x^5 = 100$ to 1 dp using trial and improvement.

Trial and improvement (C)

Find the solution to the equation x(x+2) = 40 to 1decimal place.

x	x(x+2)	40
5	5×7 = 35	too small
6	6×8 = 48	too big
5.5	41.25	tb *
5.3	38.69	ts
5.4	39.96	ts *
5.45	40.60	tb

in between

ts ↓ tb

5.4 5.45 5.5

x = 5.4 to 1dp

Page 33 Test Yourself

By using trial and improvement find the solution to $x^3 - 2x = 30$ to 1 decimal place.

By using trial and improvement find the solution to $x^3 + x = 30$ to 1 dp.

Solve these equations by trial and improvement to 1 dp.

$x^3 = 50$

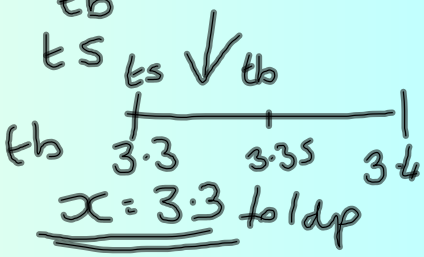
$x^2 - x = 16$

$x(x-10) = 100$

Trial and improvement (C)

By using trial and improvement find the solution to $x^3 - 2x = 30$ to 1 decimal place.

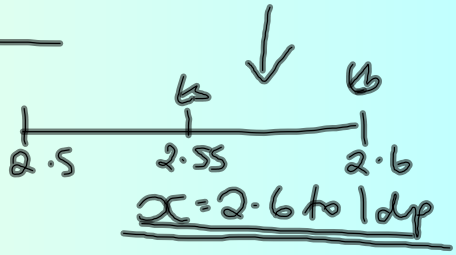
x	x^3-2x	30
4	56	too big
3	21	too small
3.5	35.875	tb
3.3	29.337	ts
3.4	32.504	ts
3.35	30.895	tb



$x = 3.3$ to 1 dp

By using trial and improvement find the solution to $x^3 + 5x = 30$ to 1 dp.

3	42	tb
2	18	ts
2.5	28	ts
2.6	30.5	tb
2.55	29.38	tb



$x = 2.6$ to 1 dp

Solve these equations by trial and improvement to 1 dp.

$x^3 = 50$ $\quad x = 3.7$

$x^2 - x = 16$

x	x^2-x	16
5	20	tb
4	12	ts
4.5	15.75	ts
4.7	17.39	tb
4.6	16.56	tb
4.55	16.152	tb

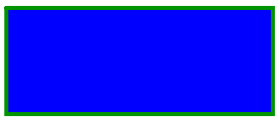
$x = 4.5$

$x(x-10) = 100$

x	$x(x-10)$	100
15	75	ts
17	119	tb
16	96	ts
16.5	107.25	tb
16.3	102.69	tb
16.2	100.44	tb
16.1	98.21	ts
16.15	99.32	ts

$x = 16.2$ to 1 dp

Trial and improvement to solve problems



The area of this shape is 552cm^2.
The length is one cm longer than the width.
Find the length and width.

length	width	area	

The area of this shape is 2970cm^2.
The length is one cm longer than the width.
Find the length and width.

length	width	area	

The area of this shape is 2679cm^2.
The length is 10cm longer than the width.
Find the length and width.

Page 512
D3,D4,D5

Attachments

fibonnaci strips.xls