(10) $\sqrt{(x-2)^2} = \sqrt{7}$

$x - 2 = \pm\sqrt{7}$

$+2 \quad +2$

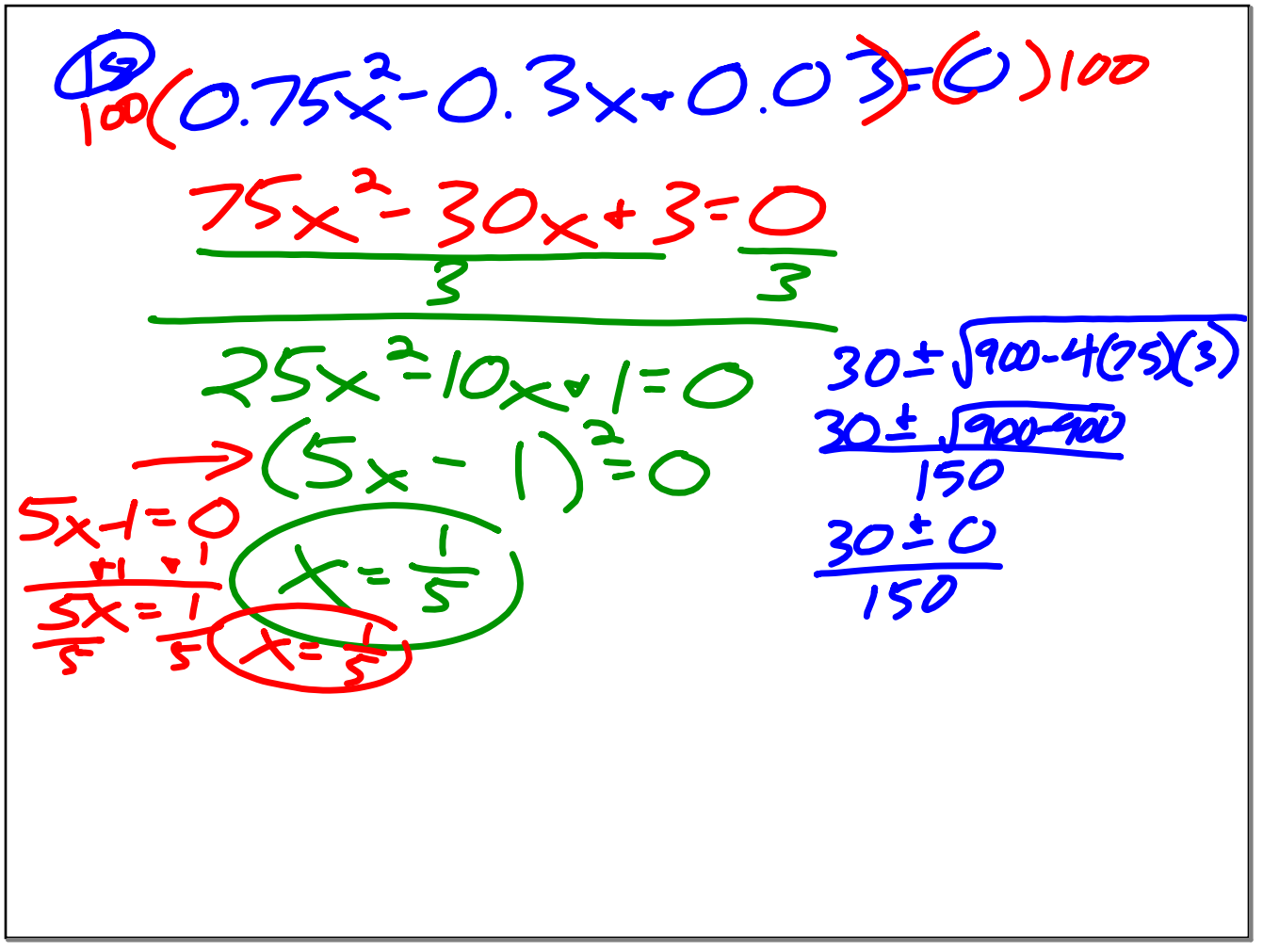
$x = 2 \pm \sqrt{7}$

(12) $4x^2 = 2x - 3 = 0$

$$\frac{2 \pm \sqrt{4 - 4(4)(-3)}}{8}$$

$$\frac{2 \pm \sqrt{4 + 48}}{8}$$

$$\frac{2 \pm \sqrt{52}}{8} = \frac{2 \pm 2\sqrt{13}}{8} = \frac{1 \pm \sqrt{13}}{4}$$


13
100(0.75x²-0.3x+0.03=0)100
75x²-30x+3=0
3 3
25x²-10x+1=0
(5x-1)²=0
5x-1=0
+1 +1
5x=1
5 5
x=1/5
x=1/5
30±√900-4(75)(3)
30±√900-900
150
30±0
150

(7) $x^2+6x=5$

$-5 \quad -5$

$x^2+6x-5=0$

$$\frac{-6 \pm \sqrt{36-4(1)(-5)}}{2}$$

$$\frac{-6 \pm \sqrt{36+20}}{2} = \frac{-6 \pm \sqrt{56}}{2} = \frac{-6 \pm 2\sqrt{14}}{2}$$

$$= \boxed{-3 \pm \sqrt{14}}$$

(11) $x^2 - 8x + 1 = 3$

$-3 \quad -3$

$x^2 - 8x - 2 = 0$

$$\frac{8 \pm \sqrt{64 - 4(1)(-2)}}{2}$$

$$\frac{8 \pm \sqrt{64 + 8}}{2}$$

$$\frac{8 \pm \sqrt{72}}{2} = \frac{8 \pm 6\sqrt{2}}{2} = 4 \pm 3\sqrt{2}$$

(13) $5x^2 + 19x = 4$

$-4 \quad -4$

$5x^2 + 19x - 4 = 0$

$$\frac{-19 \pm \sqrt{361 - 4(5)(-4)}}{10}$$

$$\frac{-19 \pm \sqrt{361 + 80}}{10}$$

$$\frac{-19 \pm \sqrt{441}}{10} = \frac{-19 \pm 21}{10}$$

$\frac{2}{10}$

$\frac{1}{5}, -4$

(3) $2x^2 + 7x + 3 = 0$

$$\frac{-7 \pm \sqrt{49 - 4(2)(3)}}{4}$$

$$\frac{-7 \pm \sqrt{49 - 24}}{4}$$

$$\frac{-7 \pm \sqrt{25}}{4} = \frac{-7 \pm 5}{4}$$

$(2x + 1)(x + 3) = 0$

$x = -\frac{1}{2}, -3$

(15) $3x^2 = 2x + 7$

$3x^2 - 2x - 7 = 0$

$$\frac{2 \pm \sqrt{4 - 4(3)(-7)}}{6}$$

$$\frac{2 \pm \sqrt{4 + 84}}{6}$$

$$\frac{2 \pm \sqrt{88}}{6} = \frac{2 \pm 2\sqrt{22}}{6} = \frac{1 \pm \sqrt{22}}{3}$$

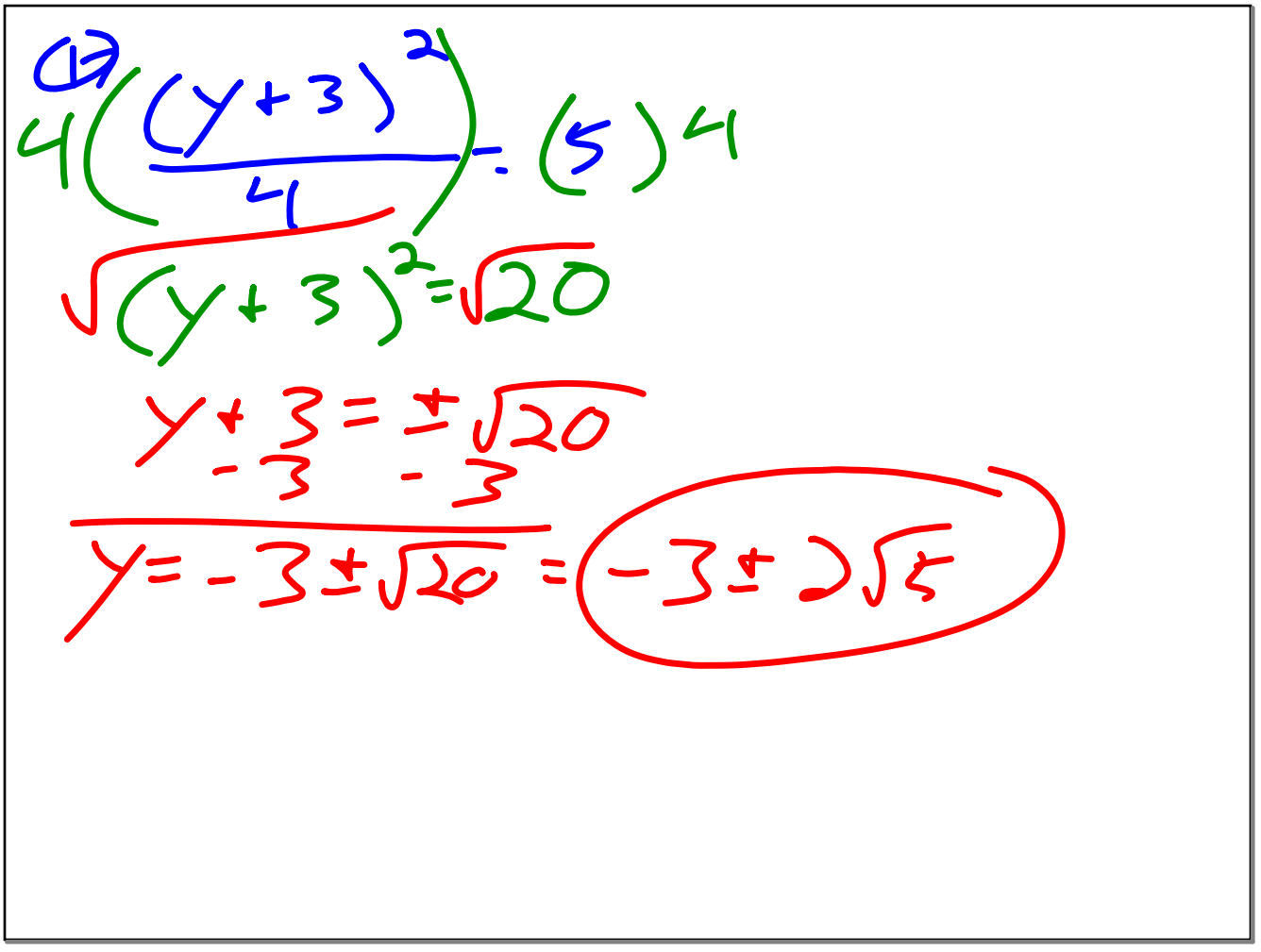
4) $12\left(\frac{2x^2}{3} + \frac{3x}{4}\right) = (1)12$

$8x^2 + 9x = 12$

$8x^2 + 9x - 12 = 0$

$$\frac{-9 \pm \sqrt{81 - 4(8)(-12)}}{16}$$

$$\frac{-9 \pm \sqrt{81 + 384}}{16} = \frac{-9 \pm \sqrt{465}}{16}$$


(13)
4((y+3)^2/4) = (5)4
√(y+3)^2 = √20
y+3 = ±√20
-3 -3
y = -3 ± √20 = -3 ± 2√5

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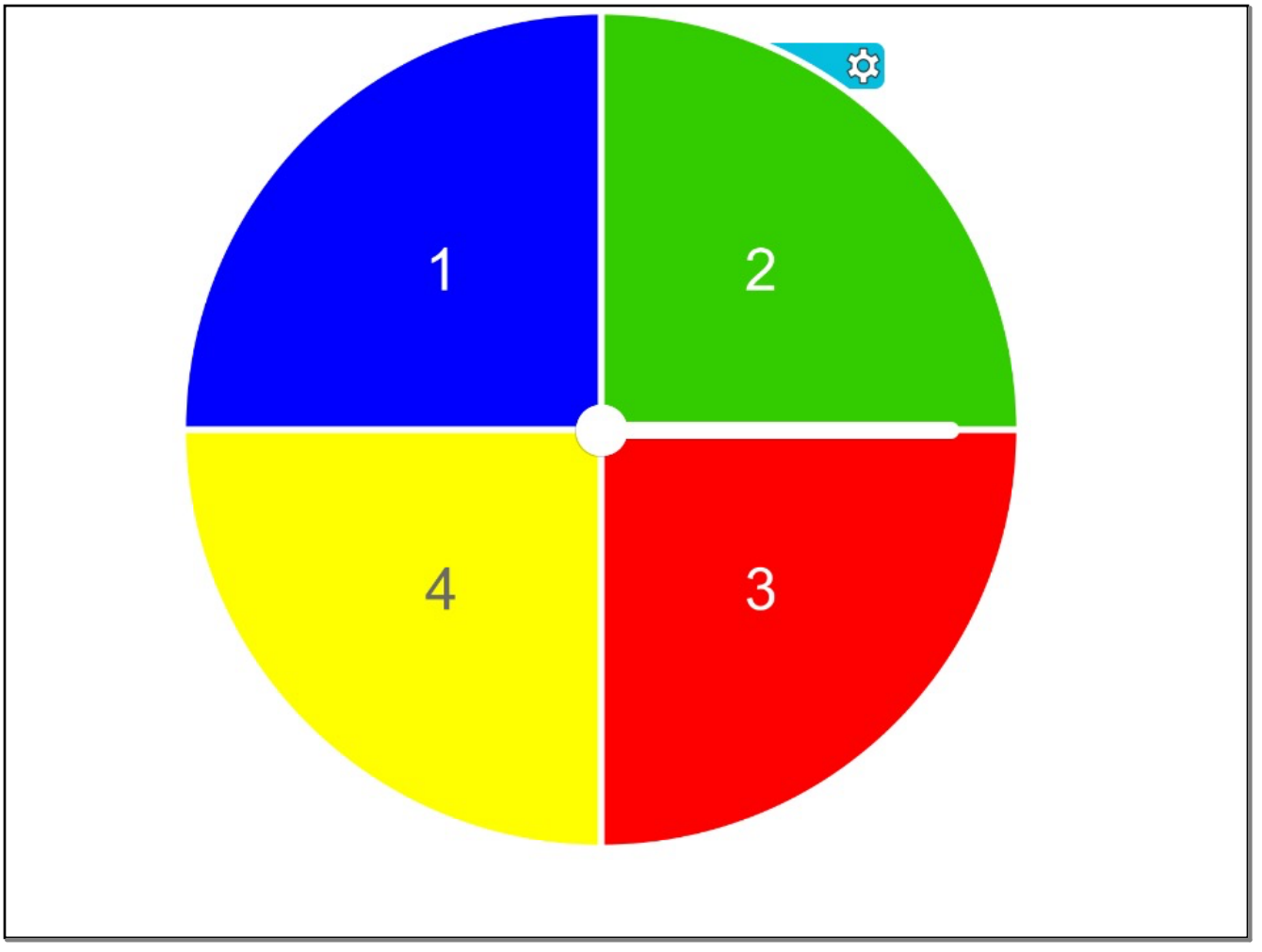
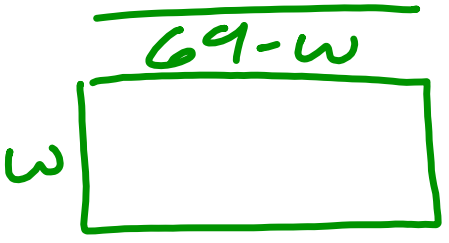


The perimeter of a rectangular yard is 138m and the area is 540m^2. What are the dimensions?



$2w + 2l = 138$

$-2w \qquad -2w$

$\frac{2l}{2} = \frac{138-2w}{2}$

$l = 69-w$

$w(69-w) = 540$

$69w - w^2 = 540$

$-69w \quad +w^2 \quad -69w$

$0 = w^2 - 69w + 540$

$0 = (w-60)(w-9)$

$w = 60, 9$

9m × 60m

$$2n^2 + 9 = 4$$

$$-9 \quad -9$$

$$\frac{2n^2}{2} = \frac{-5}{2}$$

$$\sqrt{n^2} = \sqrt{-\frac{5}{2}}$$

no solution

$$\frac{3(k+4)^2}{3} = \frac{81}{3}$$

$$\sqrt{(k+4)^2} = \sqrt{27}$$

$$k + 4 = \pm 3\sqrt{3}$$

$$-4 \quad -4$$

$$k = -4 \pm 3\sqrt{3}$$

$$e^2 + 6e + 9 = 64$$

$\sqrt{(e+3)^2} = \sqrt{64}$

$e + 3 = \pm 8$

$-3 \quad -3$

$e = -3 \pm 8$

$5, -11$

$-64 \quad -64$

$e^2 + 6e - 55 = 0$

$(e+11)(e-5) = 0$

$e = -11, 5$

How many real roots does the equation have?

$10(3k^2 - 1.2k + 1.1) = (0)10$

$30k^2 - 12k + 11 = 0$

$b^2 - 4ac$

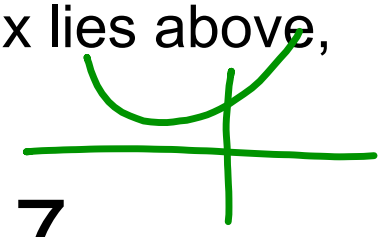
$144 - 4(30)(11)$

$144 - 1320$

-1176

0 real roots

Without graphing, find the number of x-intercepts and whether the vertex lies above, below, or on the x-axis.



$$f(x) = 3x^2 - 5x + 7$$

$25 - 4(3)(7)$
$25 - 84$
-59

0 x-ints
above

The foundation of a house is 13m by 7m. If the builder increases each dimension by the same amount, the area of the foundation will increase to $135m^2$. Find the new dimensions.

Without graphing, find the number of x-intercepts and whether the vertex lies above, below, or on the x-axis.

$$g(x) = 7x - x^2 + 5$$

$$15x^2 - 7x = 0$$

$$3x^2 - 11x = 2$$

One number is two more then three times another. The sum of their squares is 212. Find the numbers.

How many real roots does the equation have?

$$(1/3)b^2 - b - 3 = 0$$

$$n^2 + n/2 = 5$$

$$4f^2 - 18f = 10$$

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