

Even answers p. 242

12.  $\frac{2\sqrt{2}}{|x|}$

2.  $5\sqrt{3}$

14.  $\frac{3\sqrt{3}}{2}$

4.  $\frac{\sqrt{35}}{7}$

6.  $\frac{\sqrt{5}}{5}$

16.  $2\sqrt{30x}$

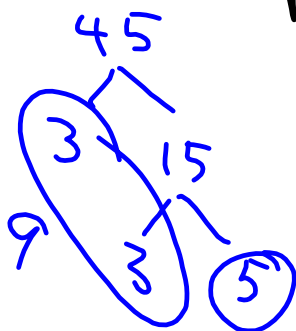
8.  $40\sqrt{5}$

10.  $-100$

#5  $-\sqrt{\frac{7}{13}} = -\frac{\sqrt{7}}{\sqrt{13}} \cdot \frac{\sqrt{13}}{\sqrt{13}}$

$$\frac{213}{91} = -\frac{\sqrt{91}}{13}$$

#6  $\sqrt{\frac{3}{15}} = \frac{\sqrt{3}}{\sqrt{15}} \cdot \frac{\sqrt{15}}{\sqrt{15}} = \frac{\sqrt{45}}{15}$



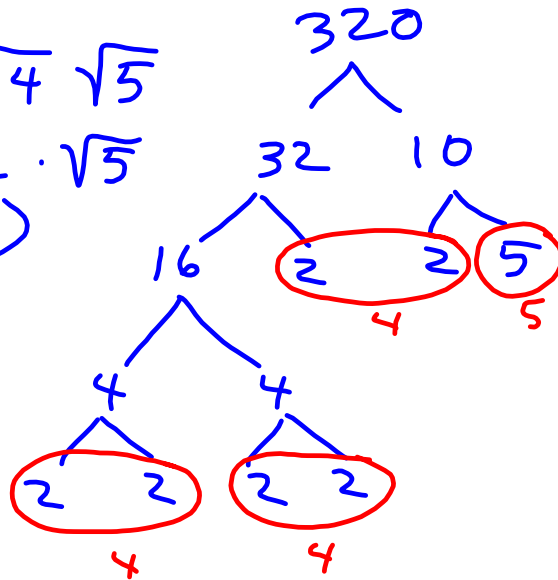
$$= \frac{\sqrt{9 \cdot 15}}{15} = \frac{3\sqrt{15}}{15} = \frac{\sqrt{15}}{5}$$

$$\#8 \quad 5\sqrt{320}$$

$$5\sqrt{4}\sqrt{4}\sqrt{4}\sqrt{5}$$

$$5 \cdot 2 \cdot 2 \cdot 2 \cdot \sqrt{5}$$

$$(40\sqrt{5})$$



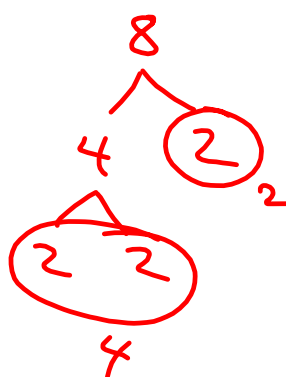
$$\#9 \quad (2\sqrt{27})^2$$

$$2^2 \cdot (\sqrt{27})^2$$

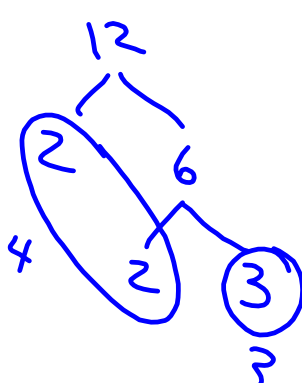
$$4 \cdot 27$$

$$108$$

$$\begin{aligned}\#10 & - \sqrt{10^4} \\ & - \sqrt{10^2} \cdot \sqrt{10^2} \\ & - 10 \cdot 10 \\ & - 100\end{aligned}$$

$$\begin{aligned}\#12 & \sqrt{\frac{8}{x^2}} = \frac{\sqrt{8}}{\sqrt{x^2}} = \frac{\sqrt{8}}{|x|} \\ & = \frac{\sqrt{4} \cdot \sqrt{2}}{|x|} = \frac{2\sqrt{2}}{|x|}\end{aligned}$$


$$\begin{aligned}
 \#13 \quad -\sqrt{\frac{7x^3}{5x}} &= -\sqrt{\frac{7x^2}{5}} \\
 &= -\frac{\sqrt{7} \cdot \sqrt{x^2}}{\sqrt{5}} \cdot \frac{\sqrt{5}}{\sqrt{5}} \\
 &= -\frac{|x|\sqrt{35}}{5}
 \end{aligned}$$

$$\begin{aligned}
 \#14 \quad \sqrt{\frac{(3)^4}{12}} &= \sqrt{\frac{\cancel{3} \cdot 3^3}{\cancel{3} \cdot 4}} \\
 &= \frac{\sqrt{3^4}}{\sqrt{12}} = \frac{\sqrt{81}}{\sqrt{4 \cdot 3}} = \frac{9}{2\sqrt{3}} \cdot \frac{\sqrt{3}}{\sqrt{3}} \\
 &= \frac{9\sqrt{3}}{2 \cdot \sqrt{3} \cdot \sqrt{3}} = \frac{9\sqrt{3}}{2\sqrt{9}} \\
 &= \frac{9\sqrt{3}}{2 \cdot 3} = \frac{9\sqrt{3}}{6} \\
 &= \frac{3\sqrt{3}}{2}
 \end{aligned}$$


# Topic: Quadratic Equations

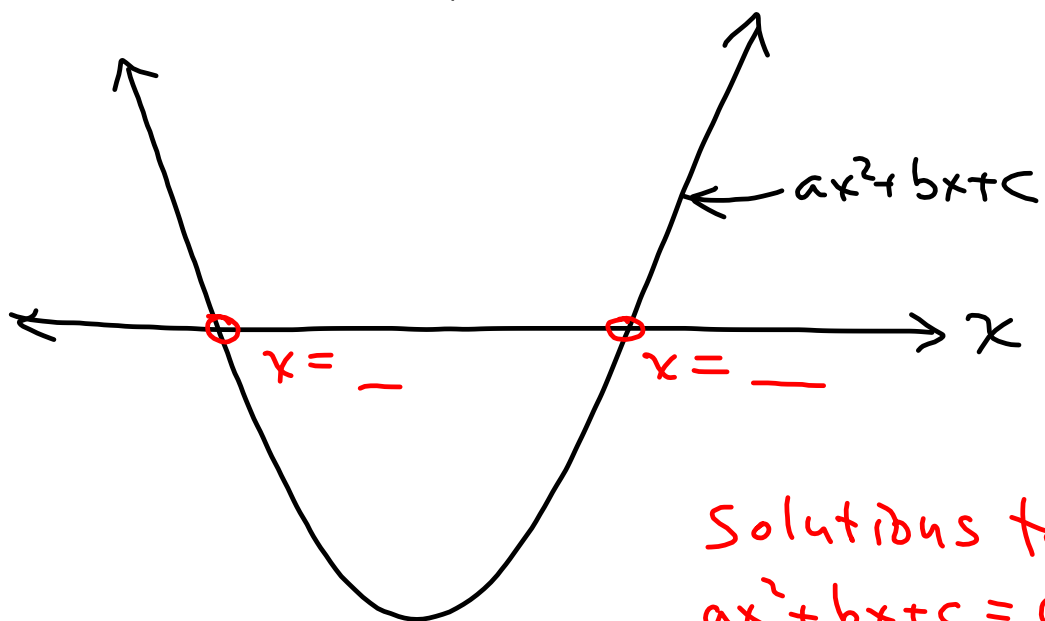
$$ax^2 + bx + c = 0$$

standard form.

no  $y$ , its place is  
now taken by  $0$ .

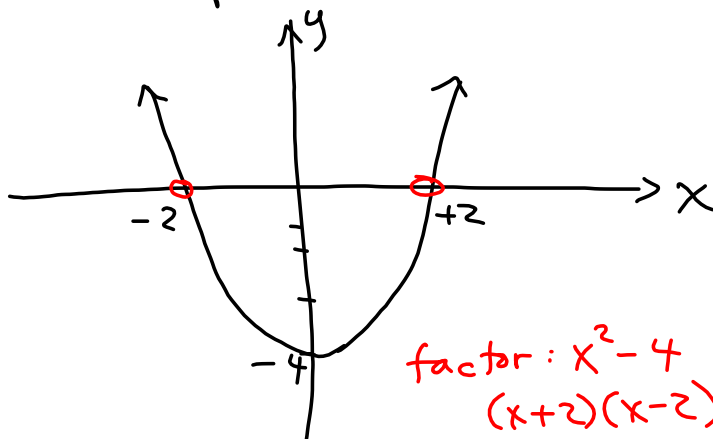
$$\underbrace{ax^2 + bx + c}_{\text{fcn (parabola)}} = \underbrace{0}_{\text{crossing x-axis}}$$

Example



Solutions to  
 $ax^2 + bx + c = 0$   
always have 2 answers -  
except sometimes ...

Example:  $x^2 - 4 = 0$



factor:  $x^2 - 4$   
 $(x+2)(x-2)$

$(x+2)(x-2) = 0$   
 $\underbrace{\quad}_{=0} \quad \underbrace{\quad}_{=0}$   
 one sol. other sol.

$x+2=0$      $x=-2$   
 $x-2=0$      $x=2$

$(x-3)^2 = 0$



only 1 solution  
 (call it "double"  
 solution)

$(x-3)(x-3) = 0$   
 $\underbrace{\quad}_{x-3=0} \quad \underbrace{\quad}_{x-3=0}$   
 $x=3$      $x=3$

$$\#8 \quad 2x^2 - x - 3 = 0$$

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

$$m-n = -6$$

$$m+n = -1$$

$$\begin{array}{r|l} -6 & \\ \hline -1 & 6 \\ -2 & 3 \\ -3 & 2 \\ -6 & 1 \end{array}$$

$$2x-3=0$$

$$2x=3$$

$$x = \frac{3}{2}$$

$$x+1=0$$

$$x = -1$$

answer!

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

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

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