

Name_____

8A; Algebra 1

Date_____

8A Period____

Extra Review for Quadratics Test

For 1-5: Solve to find the roots

1) $6 - x^2 = x$

2) $\frac{3+y}{2y} = \frac{y-1}{y}$

3) $x^2 = 9(10 - x)$

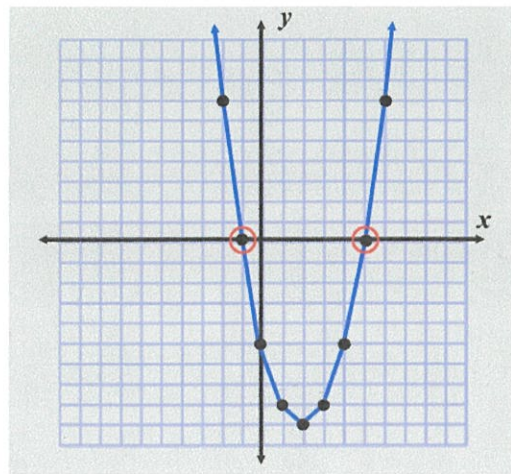
4) $-2t^2 + 20t - 42 = 0$

5) $\frac{x-3}{x-2} = \frac{x+3}{2x}$

6) $2x^2 - 80 = 0$

7) The altitude of a parallelogram measures 11 centimeters less than its base. The area of the parallelogram is 80 square centimeters. Find the measure of its base and the measure of its altitude.

8) Find the equation of the following graph:



Simplify the following

9) $\sqrt{12}$

10) $2\sqrt{20}$

11) $\frac{1}{2}\sqrt{48}$

12) $\frac{3}{2}\sqrt{80a^5b^6}$

13) $\sqrt{\frac{1}{2}}$

14) $\sqrt{\frac{36}{5}}$

15) $2\sqrt{\frac{1}{8}}$

16) $3\sqrt{18x^3}$

17) $\sqrt{49x^5}$

18) $7\sqrt{36r^2s}$

19) $-4\sqrt{243x^5y^2}$

20) $\sqrt{5\frac{1}{3}}$

Extra Review for Quadratics Test

For 1-5: Solve to find the roots

1) $6 + x^2 = x$
 ~~$-6 + x^2$~~ ~~$-6 + x^2$~~
 $0 = x^2 + x - 6$

$x^2 + x - 6 = 0$
 $(x+3)(x-2) = 0$

$x+3=0$ $-3 -3$ $x=-3$	$x-2=0$ $+2 +2$ $x=2$
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$\{-3, 2\}$

2) $3+y = y-1$ $y \neq 0$
 ~~$2y$~~ ~~$y \neq 0$~~

$y(3+y) = 2y(y-1)$
 $3y + y^2 = 2y^2 - 2y$
 ~~$-3y$~~ ~~y^2~~ ~~$-y^2 - 3y$~~

can't divide by 0
reject Denominator
can't be zero
 $0 = y^2 - 5y$
 $y^2 - 5y = 0$
 $y(y-5) = 0$
 $y=0$ $y-5=0$
 $y=5$ $\{5\}$

3) $x^2 = 9(10-x)$
 $x^2 = 90 - 9x$
 ~~$-90 + 9x$~~ ~~$-90 + 9x$~~

$x^2 + 9x - 90 = 0$
 $(x+15)(x-6) = 0$

$x+15=0$ $-15 -15$ $x=-15$	$x-6=0$ $+6 +6$ $x=6$
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$\{-15, 6\}$

4) $-2t^2 + 20t - 42 = 0$
 ~~$+2x^2$~~ ~~$-20t + 42$~~ ~~$+2t^2 - 20t + 42$~~

$0 = 2t^2 - 20t + 42$
 $2t^2 - 20t + 42 = 0$
 $2(t^2 - 10t + 21) = 0$

$2(t-7)(t-3) = 0$

$t-7=0$ $+7 +7$ $t=7$	$t-3=0$ $+3 +3$ $t=3$
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$\{3, 7\}$

5) $x-3 = x+3$ $x \neq 0$ $x \neq 2$
 ~~$x-2$~~ ~~$2x$~~

$2x(x-3) = (x-2)(x+3)$
 $2x^2 - 6x = x^2 + 3x - 2x - 6$
 $2x^2 - 6x = x^2 + x - 6$
 ~~$-x^2 - x + 6$~~ ~~$-x^2 - x + 6$~~

$x^2 - 7x + 6 = 0$
 $(x-6)(x-1) = 0$

$x-6=0$ $+6 +6$ $x=6$	$x-1=0$ $+1 +1$ $x=1$
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$\{1, 6\}$

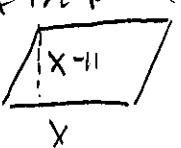
6) $2x^2 - 80 = 0$
 ~~$+80 +80$~~

$2x^2 = 80$
 $\frac{2x^2}{2} = \frac{80}{2}$

$x^2 = 40$
 $\sqrt{x^2} = \sqrt{40}$
 $x = 2\sqrt{10}$

$x = \pm 2\sqrt{10}$

7) The altitude of a parallelogram measures 11 centimeters less than its base. The area of the parallelogram is 80 square centimeters. Find the measure of its base and the measure of its altitude.

L	E	S	C		
<p>let $x =$ the base of the parallelogram $-11 =$ the altitude of the parallelogram</p> 	<p>Area = base \cdot height (height = altitude)</p> <p>$x(x-11) = 80$ $x^2 - 11x = 80$ -80 -80 $x^2 - 11x - 80 = 0$ $(x-16)(x+5) = 0$</p> <table border="1"> <tr> <td>$x-16=0$ $+16 +16$ $x=16$</td> <td>$x+5=0$ $-5 -5$ $x=-5$</td> </tr> </table> <p>$x=16$ $x-11=5$</p> <p>$x=-5$ reject can't have negative dimensions $x+11=-16$</p>	$x-16=0$ $+16 +16$ $x=16$	$x+5=0$ $-5 -5$ $x=-5$	<p>The base of the parallelogram measures 16cm</p> <p>the altitude of the parallelogram measure 5cm</p>	<p>$16 - 11 = 5$</p> <p>$16 \cdot 5 = 80$</p> <p>✓</p>
$x-16=0$ $+16 +16$ $x=16$	$x+5=0$ $-5 -5$ $x=-5$				

8) Find the equation of the following graph:

$$f(x) = x^2 - 4x - 5$$

$$\text{or } y = x^2 - 4x - 5$$

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

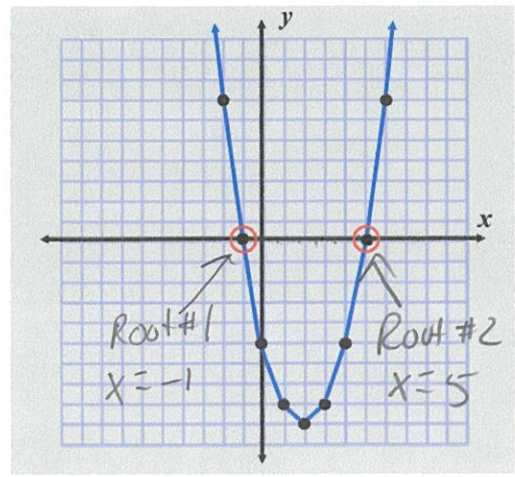
$$x^2 - 5x + 1x - 5 = 0$$

$$(x+1)(x-5) = 0$$

$$x = -1 \quad | \quad x = 5$$

Work backwards from the roots

start here



Simplify the following

NO ± Bc you are simplifying and NOT solving

9) $\sqrt{12}$
 $\sqrt{4} \cdot \sqrt{3}$
 $2\sqrt{3}$

10) $2\sqrt{20}$
 $2 \cdot \sqrt{4} \cdot \sqrt{5}$
 $2 \cdot 2 \cdot \sqrt{5}$
 $4\sqrt{5}$

11) $\frac{1}{2} \sqrt{48}$
 $\frac{1}{2} \cdot \sqrt{16} \cdot \sqrt{3}$
 $\frac{1}{2} \cdot 4 \cdot \sqrt{3}$
 $2\sqrt{3}$

12) $\frac{3}{2} \sqrt{80a^5b^6}$
 $\frac{3}{2} \cdot \sqrt{16} \cdot \sqrt{5} \cdot \sqrt{a^4} \cdot \sqrt{a} \cdot \sqrt{b^6}$
 $\frac{3}{2} \cdot 4 \cdot \sqrt{5} \cdot a^2 \cdot \sqrt{a} \cdot b^3$
 $6a^2b^3\sqrt{5a}$

13) $\frac{1}{\sqrt{2}} = \frac{\sqrt{1}}{\sqrt{2}}$
 $\frac{\sqrt{1}}{\sqrt{2}} \cdot \frac{\sqrt{2}}{\sqrt{2}} = \frac{\sqrt{2}}{\sqrt{2} \cdot \sqrt{2}} = \frac{\sqrt{2}}{2}$

14) $\sqrt{\frac{36}{5}} = \frac{\sqrt{36} \cdot \sqrt{5}}{\sqrt{5} \cdot \sqrt{5}} = \frac{\sqrt{180}}{\sqrt{25}}$
 $\frac{\sqrt{36} \cdot \sqrt{5}}{5} = \frac{6\sqrt{5}}{5}$

15) $2\sqrt{\frac{1}{8}} = 2 \cdot \frac{\sqrt{1}}{\sqrt{8}} = \frac{2 \cdot \sqrt{8}}{8} = \frac{2 \cdot 2\sqrt{2}}{8} = \frac{4\sqrt{2}}{8} = \frac{\sqrt{2}}{2}$

16) $3\sqrt{18x^3}$
 $3 \cdot \sqrt{9} \cdot \sqrt{2} \cdot \sqrt{x^2} \cdot \sqrt{x}$
 $3 \cdot 3 \cdot \sqrt{2} \cdot x \cdot \sqrt{x}$
 $9x\sqrt{2x}$

17) $\sqrt{49x^5}$
 $\sqrt{49} \cdot \sqrt{x^4} \cdot \sqrt{x}$
 $7 \cdot x^2 \cdot \sqrt{x}$
 $7x^2\sqrt{x}$

18) $7\sqrt{36r^2s}$
 $7 \cdot \sqrt{36} \cdot \sqrt{r^2} \cdot \sqrt{s}$
 $7 \cdot 6 \cdot r \cdot \sqrt{s}$
 $42r\sqrt{s}$

19) $-4\sqrt{243x^5y^2}$
 $-4 \cdot \sqrt{81} \cdot \sqrt{3} \cdot \sqrt{x^4} \cdot \sqrt{x} \cdot \sqrt{y^2}$
 $-4 \cdot 9 \cdot \sqrt{3} \cdot x^2 \cdot \sqrt{x} \cdot y$
 $-36x^2y\sqrt{3x}$

20) $\sqrt{5\frac{1}{3}} = \sqrt{\frac{16}{3}} = \frac{\sqrt{16}}{\sqrt{3}}$
 $\frac{\sqrt{16} \cdot \sqrt{3}}{\sqrt{3} \cdot \sqrt{3}} = \frac{\sqrt{48}}{\sqrt{9}} = \frac{4\sqrt{3}}{3}$