

Questions before we take our mini-
test?

-We will take it in about 20 mins...

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Solve each equation. Remember to check for extraneous solutions.

7. $\left(\frac{1}{3r} + \frac{r+3}{3r} - \frac{1}{r}\right) \cdot \frac{3}{3} = 0$ $r \neq 0$

$1 + r + 3 - 3 = 0$

$r = -1$

$\frac{1+r+3-3}{3r} = 0$

$\frac{1+r}{3r} = 0$ $r = -1$

8. $\frac{(k-5)(3)}{k(k-5)} + \frac{6(k-5)(1)}{k(k-5)} = 0$ $k \neq 5, 0$

$3 + 6(k-5) - k = 0$

$3 + 6k - 30 - k = 0$

$-27 + 5k = 0$

$5k = 27$

$k = \frac{27}{5}$

9. Graph each rational function below. Write out or label any vertical, horizontal, or slant asymptotes, any x- and y-intercepts; holes. If there aren't any of what's asked for above, write "none."

9. $f(x) = \frac{2}{x+3} - 2$ $eb \rightarrow -2$

$2 = \frac{2}{x+3}$ $\frac{2}{3} - 2 = \frac{2}{3} - \frac{6}{3} = -\frac{4}{3}$

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9.

$$f(x) = \frac{2}{x+3} - 2 \cdot \frac{(x+3)}{(x+3)} = \frac{2 - 2(x+3)}{(x+3)} = \frac{2 - 2x - 6}{x+3} = \frac{-2x - 4}{x+3}$$

$2 = \frac{2}{x+3}$
 $2x + 6 = 2$
 $2x = -4$
 $x = -2$

$\frac{2}{3} - \frac{2}{3}$
 $-\frac{4}{3}$

Horizontal Asymptote(s): $y = -2$
 Vertical Asymptote(s): $x = -3$
 Slant Asymptote(s): none
 x-intercept(s): $(-2, 0)$
 y-intercept(s): $(0, -\frac{4}{3})$
 Hole(s): none

