

**WRITE ALL OF YOUR ANSWERS ON THE WORKSHEET. SHOW WORK CLEARLY AND NEATLY ONLY ON THE FRONT OF A SEPARATE SHEET OF LOOSE- LEAF NOTEBOOK PAPER FOR ALL PROBLEMS THAT REQUIRE WORK. STAPLE WORK TO THE BACK OF THE WORKSHEET.**

Find the value of the expression for the given replacement value.

1)  $\frac{x-1}{x+5}$ ;  $x = -4$  1) \_\_\_\_\_

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

3)  $\frac{x^2-10x+5}{x^2+2x-1}$ ;  $x = 8$  3) \_\_\_\_\_

4)  $\frac{a^2}{1-a^2}$ ;  $a = 9$  4) \_\_\_\_\_

Solve the problem.

5) A formula for the focal length of a lens is  $f = \frac{ab}{b+a}$  5) \_\_\_\_\_

Calculate  $f$  (the focal length) for  $a = 16$  cm and  $b = 12$  cm.

6) A gas law in chemistry says that  $\frac{PV}{T} = \frac{Pv}{t}$ . If  $T = 340$ ,  $t = 390$ ,  $V = 12$ ,  $P = 20$ , and  $v = 5$ , find the value of  $p$ . Round to the nearest thousandth. 6) \_\_\_\_\_

Find all values that make the expression undefined.

7)  $\frac{9}{z+5}$  7) \_\_\_\_\_

8)  $\frac{r-4}{8}$  8) \_\_\_\_\_

9)  $\frac{x^3+49x}{3x-15}$  9) \_\_\_\_\_

10)  $\frac{7y-5}{y^2-81}$  10) \_\_\_\_\_

11)  $\frac{x^2-36}{x^2+8x+12}$  11) \_\_\_\_\_

12)  $\frac{x^2-4}{x^2-9x+18}$  12) \_\_\_\_\_