

EXERCISE A

Name the undefined values for each equation. DO NOT SOLVE.

1) $\frac{3}{x-9} = \frac{1}{2x+5}$

 $x \neq$ _____

2) $\frac{4}{7} + \frac{x-7}{x} = \frac{2}{x+5}$

 $x \neq$ _____

3) $\frac{x}{2x+6} = \frac{-11}{x^2-13x+42}$

 $x \neq$ _____

Solve each equation. Check for undefined values.

4) $\frac{4}{x-2} = \frac{3}{x}$

5) $\frac{g^2-6}{g} = \frac{g-4}{2}$

6) $\frac{3}{4} = \frac{3}{2} - \frac{12}{x}$

7) $\frac{2}{d} + \frac{1}{4} = \frac{11}{12}$

8) $t + \frac{12}{t} - 8 = 0$

9) $\frac{1}{x-1} + \frac{2}{x} = 0$

10) $\frac{12}{v^2-16} - \frac{24}{v-4} = 3$

11) $\frac{1}{w+2} + \frac{1}{w-2} = \frac{4}{w^2-4}$

12) A worker can power wash a wall of a certain size in 5 hours. Another worker can do the same job in 4 hours. If the workers work together, how long would it take to do the job?

**EXERCISE B**

Name the undefined values for each equation. DO NOT SOLVE.

13) $\frac{2}{5} - \frac{y}{y+3} = \frac{4}{6y-5}$

 $y \neq$ _____

14) $\frac{5}{4(n+1)} = \frac{n-1}{n^2-25}$

 $n \neq$ _____

15) $\frac{7}{x} + \frac{x}{x^2+3x-28} = \frac{1}{8-4x}$

 $x \neq$ _____

Solve each equation or inequality. Check for undefined values.

$$16) \quad \frac{y}{y+1} = \frac{2}{3}$$

$$17) \quad n+5 = \frac{6}{n}$$

$$18) \quad \frac{9}{t-3} = \frac{t-4}{t-3} + \frac{1}{4}$$

$$19) \quad \frac{2}{y+2} - \frac{y}{2-y} = \frac{y^2+4}{y^2-4}$$

$$20) \quad \frac{2x}{3} = \frac{x^2+5x-2}{x+5}$$

$$21) \quad \frac{2x+1}{3} - \frac{x-5}{4} = \frac{1}{2}$$

$$22) \quad \frac{b-4}{b-2} = \frac{b-2}{b+2} + \frac{1}{b-2}$$

$$23) \quad \frac{2q}{2q+3} - \frac{2q}{2q-3} = 1$$

24) On a particular day, the wind added 3 kilometers per hour to Lance's rate when he cycled with the wind, and subtracted 3 kilometers per hour from his rate on his return trip. Lance found that in the same amount of time he could cycle 36 kilometers with the wind, he could go only 24 kilometers against the wind. What is his normal bicycling speed with no wind?



hint: you may want to consider using:

$$d = rt$$

ANSWERS:

1) 9, -5/2

3) -3, 6, 7

5) g = -6, 2

7) d = 3

9) x = 2/3

11) Ø

13) -3, 5/6

15) 0, -7, 2, 4

17) n = -6, 1

19) no solution

21) x = -13/5

23) $q = \frac{-3 \pm 3\sqrt{2}}{2}$

24) 15km/hr.

or with the calculator prog:
q = 0.6, -3.6