

HW 3.8

p. 163 2 – 18 even



Find the excluded values, if any, of the expression.

2. $\frac{-8}{x-5}$

$$x - 5 = 0$$

$$x = 5$$

The excluded value is 5.

4. $\frac{-x}{4x-8}$

$$4x - 8 = 0$$

$$4x = 8$$

$$x = 2$$

The excluded value is 2.



Find the excluded values, if any, of the expression.

$$6. \frac{x + 1}{3x + 7}$$

$$3x + 7 = 0$$

$$3x = -7$$

$$x = \frac{-7}{3}$$

The excluded value is $-7/3$.

$$8. \frac{8}{x^2 + 4x - 12}$$

$$x^2 + 4x - 12 = 0$$

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

$$x - 2 = 0$$

$$x = 2$$

$$x + 6 = 0$$

$$x = -6$$

The excluded values are -6 and 2 .



Simplify the rational expression, if possible. Find the excluded values.

$$10. \quad \frac{-36x^2}{18x} = \frac{-2 \cdot \cancel{18} \cdot \cancel{x} \cdot x}{\cancel{18} \cdot \cancel{x}} = \frac{-2x}{1} = -2x$$

$$-2x = 0$$

$$x = 0$$

The excluded value is 0.

$$12. \quad \frac{4x - 12}{3 - x} = \frac{4(x - 3)}{-(-3 + x)} = \frac{4(\cancel{x - 3})}{-(\cancel{x - 3})} = \frac{4}{-1} = -4$$

$$x - 3 = 0$$

$$x = 3$$

The excluded value is 3.



Simplify the rational expression, if possible. Find the excluded values.

$$14. \quad \frac{x+3}{x^2+10x+21} = \frac{\cancel{x+3}}{(\cancel{x+3})(x+7)} = \frac{1}{(x+7)}$$

$$x+3=0 \quad x+7=0$$

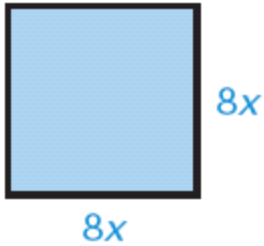
$$x=-3 \quad x=-7$$

The excluded values are -3 and -7 .



Write and simplify a rational expression for the ratio of the perimeter to the area of the given figure.

16. Square

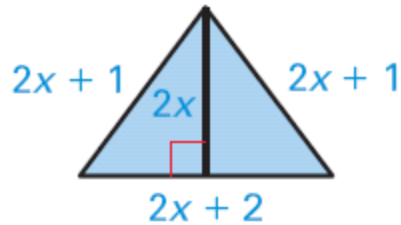


$$\frac{4 \bullet 8x}{8x \bullet 8x} = \frac{\cancel{4} \bullet \cancel{8x}}{2 \bullet \cancel{4} \bullet x \bullet \cancel{8x}} = \frac{1}{2x}$$



Write and simplify a rational expression for the ratio of the perimeter to the area of the given figure.

18. Triangle



$$\begin{aligned} & \frac{(2x+1) + (2x+1) + (2x+2)}{\frac{1}{2}(2x)(2x+2)} \\ &= \frac{6x+4}{(x)(2x+2)} = \frac{2(3x+2)}{2x^2+2x} = \frac{\cancel{2}(2x+1)}{\cancel{2}x(x+1)} \\ &= \frac{2x+1}{x(x+1)} \end{aligned}$$

