NAME:

Test 4 (Lessons 7–8): Rational Expressions

Name the restrictions for the denominator.

1) $\dfrac{1}{2x^2+7x-30}$

2) $\dfrac{1}{x^2-5x+6}$

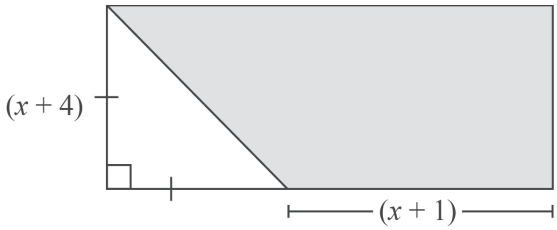
Simplify. State the restrictions on the denominator.

3) $\dfrac{\dfrac{1}{x}+\dfrac{4}{x^2}}{1+\dfrac{2}{x}-\dfrac{8}{x^2}}$

Simplify. State the restrictions on the denominator.

4) $\dfrac{6x^2+7x+2}{2x^2-5x-12} \div \dfrac{3x+2}{3x-12}$

5) Determine the probability of landing on the triangle.



Simplify. Name the restrictions on the domain.

6) $\dfrac{x}{5}+\dfrac{x-6}{x^2+6x+5}+\dfrac{2x+5}{x+5}$

7) $\dfrac{7x+8}{x+8}-\dfrac{x+3}{3x-12}$

8) $\dfrac{\dfrac{x}{x-1}+\dfrac{3}{x+1}+\dfrac{6}{x^2-1}}{\dfrac{1}{x-1}}$

9) Calculate the efficiency ratio of the total surface area of a cone to volume of a cone.

$$SA = \pi r^2 + \pi rl \qquad V = \frac{1}{3}\pi r^2 h$$

10) If a lower efficiency rating is desired, which is the best option for the cone? Use the simplified ratio from problem 9.

	P	Q
radius, r	7	8
lateral height, ℓ	10	12.3
height, h	11.5	10