



# Simplifying Algebraic Expressions

Name \_\_\_\_\_

Score \_\_\_\_\_

SAE:17

Simplify each expression.

$$1) \quad \frac{2a + 3b}{2a^2 + 5ab + 3b^2} - \frac{a - b}{3a^2 - 5ab + 2b^2}$$

$$2) \quad 1 + \frac{z + 2}{4z - 1}$$

$$3) \quad \frac{3k}{(5k - 1)^2} + \frac{7k}{5k - 1}$$

$$4) \quad \frac{3p - 6q}{(p - 2q)(2p - q)} - \frac{1}{(2p - q)(p + 2q)}$$

$$5) \quad \frac{25 - 9m^2}{10 - 21m + 9m^2} - \frac{4m^2 - 49}{2m^2 - 7m - 49}$$

$$6) \quad \frac{5}{2d - 1} + \frac{7}{1 - 3d}$$



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## Answer key

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Simplify each expression.

$$1) \frac{2a + 3b}{2a^2 + 5ab + 3b^2} - \frac{a - b}{3a^2 - 5ab + 2b^2}$$

$$\frac{2a - 3b}{3a^2 + ab - 2b^2}$$

$$2) 1 + \frac{z + 2}{4z - 1}$$

$$\frac{5z + 1}{4z - 1}$$

$$3) \frac{3k}{(5k - 1)^2} + \frac{7k}{5k - 1}$$

$$\frac{35k^2 - 4k}{25k^2 - 10k + 1}$$

$$4) \frac{3p - 6q}{(p - 2q)(2p - q)} - \frac{1}{(2p - q)(p + 2q)}$$

$$\frac{3p + 6q - 1}{2p^2 + 3pq - 2q^2}$$

$$5) \frac{25 - 9m^2}{10 - 21m + 9m^2} - \frac{4m^2 - 49}{2m^2 - 7m - 49}$$

$$\frac{9m^2 - 41m - 21}{-3m^2 + 23m - 14}$$

$$6) \frac{5}{2d - 1} + \frac{7}{1 - 3d}$$

$$\frac{d + 2}{6d^2 - 5d + 1}$$