

Prove by Factoring

Name _____

Class _____

Date _____

ANSWERS

1a

1b

2a

2b

3a

3b

4a

4b

5a

5b

6a

6b

Prove the following expressions

1. a) $(y-4)(y+4)-(y-3)^2 = 6y-25$

b) $(x+3)^2-(x-2)(x+2) = 13+6x$

2. a) $\left(\frac{3+a}{3-a}-\frac{12a}{9-a^2}\right) \div \frac{3-a}{3} = \frac{3}{3+a}$

b) $\left(\frac{a-1}{a+1}-\frac{a}{a-1}\right) \times \frac{a+1}{1-3a} = \frac{1}{a-1}$

3. a) $\frac{x}{x-y}-\frac{x-y}{x+y} = \frac{y(3x-y)}{x^2-y^2}$

b) $\frac{x-y}{x+y}-\frac{y}{x-y} = \frac{x(x-3y)}{x^2-y^2}$

4. a) $\frac{x^2-y^2}{2xy} \times \frac{2y}{x-y} = \frac{x+y}{x}$

b) $\frac{4xy}{x^2-y^2} \times \frac{x+y}{xy} = \frac{4}{x-y}$

5. a) $\frac{6a^2}{3+2a}-3a = -\frac{9a}{3+2a}$

b) $\frac{15m^2}{3m-2}-5m = \frac{10m}{3m-2}$

6. a) $\frac{ab-a^2}{b^2} \div \frac{b-a}{b} = \frac{a}{b}$

b) $\frac{a+b}{a} \div \frac{ab+b^2}{a^2} = \frac{a}{b}$

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