**RATIONAL EXPRESSIONS**

Simplify:

|  |  |
| --- | --- |
| 1. $\frac{x^{2}+4x+3}{x+1} $
 | 1. $\frac{x^{3}+x^{2}}{x+1}$
 |
| 1. $\frac{x^{2}-7x-18}{2x^{2}+3x-2}- \frac{3x^{2}+12xy-15y^{2} }{6x^{3}-6xy^{2}}$
 | 1. $\frac{x^{2}+6x+5}{x^{2}+25}$
 |
| 1. $\frac{\left(x+3\right)}{\left(x-4\right)} ⋅ \frac{x^{2}-2x-8}{x^{2}-9}$
 | 1. $\frac{x-7}{x-1}∙\frac{x^{2}-1}{3x-21}$
 |
| 1. $\left(4x^{2}-25\right)÷ \frac{2x+5}{14}$
 | 1. $\frac{x+3}{x^{2}+x-2}+\frac{2}{x^{2}-1}$
 |
| 1. $\frac{x^{2}+3x-10 }{2x} ÷ \frac{x^{2}-5x+6}{x^{2}-3x}$
 | 1.
 |

**FACTORING AND CALCULATING ZEROS**

Factor each of the following and calculate the zeros when appropriate.

|  |  |
| --- | --- |
| 1. $12x^{5}y^{4}-4x^{4}y^{3}+2x^{3}y^{2}$
 | 1. $5x^{2}=20x$
 |
| 1. $2\left(x-7\right)+9x(x-7)$
 | 1. $5y\left(a-b\right)-(a-b)$
 |
| 1. $x^{3}-5x^{2}+3x-15 $
 | 1. $6x^{2}\left(5x-1\right)+5x-1$
 |
| 1. $x^{2}+5x=-4$
 | 1. $x^{2}+7=10x-18$
 |
| 1. $4x^{2}+16x-9=0$
 | 1. $x^{2}-8x+16-y^{2}$
 |