

Math 3 Advanced  
9.2 Multiplying Rationals

Simplify.

$$1. \frac{p^2 - p - 20}{p - 5} \cdot \frac{p^2 + 7p + 12}{p^2 + 8p + 16}$$

$$2. \frac{b^2 + 7b + 12}{b^2 - 9} \cdot \frac{b - 3}{b + 3}$$

$$3. \frac{w^2 - 4w}{2w + 10} \cdot \frac{w^2 + w - 20}{3w - 12}$$

$$4. \frac{a^2 - 25}{a^2 - 2a - 15} \cdot \frac{5a - 5}{a^2 + 4a - 5}$$

$$5. \frac{y^2 + 7y + 10}{3y^2 - 6y} \cdot \frac{2y^3 - 8y}{y^2 + 4y + 4}$$

$$6. \frac{2c^2 + 3c - 20}{15c^2 + 65c + 20} \cdot \frac{24c^2 + 52c - 20}{4c^2 - 25}$$

$$7. \frac{de^2}{6d - 4e} \div \frac{4de}{24d - 16e}$$

$$8. \frac{2p - 10q}{12p + 4q} \div \frac{6p - 30q}{9p + 3q}$$

$$9. \frac{r + 9}{r^2 - 8r + 15} \div \frac{r^2 + 8r - 9}{r - 3}$$

$$10. (p^2 - 7p) \div \frac{p^2 - 9p + 14}{p^2 - p}$$

$$11. \frac{z + 12}{z - 5} \div \frac{z^2 - 7z + 10}{z^2 - 10z + 25}$$

$$12. \frac{g^2 - 4}{g^2 + g - 6} \div \frac{2g^2 + 4g}{g^2 + 9g + 18}$$

**Answer List**

- |                           |                              |
|---------------------------|------------------------------|
| 1. $p + 3$                | 2. $\frac{b+4}{b+3}$         |
| 3. $\frac{w(w-4)}{6}$     | 4. $\frac{5}{a+3}$           |
| 5. $\frac{2(y+5)}{3}$     | 6. $\frac{4(3c-1)}{5(3c+1)}$ |
| 7. $e$                    | 8. $\frac{1}{4}$             |
| 9. $\frac{1}{(r-5)(r-1)}$ | 10. $\frac{p^2(p-1)}{p-2}$   |
| 11. $\frac{z+12}{z-2}$    | 12. $\frac{g+6}{2g}$         |

**Catalog List**

- |               |                |                |                |
|---------------|----------------|----------------|----------------|
| 1. TRI AE 89  | 2. TRI AE 90   | 3. TRI AE 91   | 4. TRI AE 92   |
| 5. TRI AE 93  | 6. TRI AE 94   | 7. TRI AE 115  | 8. TRI AE 116  |
| 9. TRI AE 117 | 10. TRI AE 118 | 11. TRI AE 119 | 12. TRI AE 120 |