

TT 1. *Foundations and Pre-calculus Mathematics 10* (Pearson), questions 6.b), 6.d), 10.a), 10.c), 10.e), 10.g), and 21 on pages 194 and 195 **Possible Solutions**

6. b) $\sqrt{b^2} = b$
 $\sqrt{121} = 11$

$$(b + 11)(b - 11)$$

d) $\sqrt{36} = 6$
 $\sqrt{c^2} = c$

$$(6 + c)(6 - c)$$

10. a) $\sqrt{9d^2} = 3d$
 $\sqrt{16f} = 4f$

$$(3d + 4f)(3d - 4f)$$

c) Factor out the GCF.

$$9(16a^2 - b^2) \leftarrow \text{Continue to factor the difference of squares.}$$

$$\sqrt{16a^2} = 4a$$
$$\sqrt{b^2} = b$$

The factored form is $9(4a + b)(4a - b)$.

e) $\sqrt{81k^2} = 9k$
 $\sqrt{49m^2} = 7m$

The factored form is $(9k + 7m)(9k - 7m)$.

g) $\sqrt{v^2} = v$
 $\sqrt{36t^2} = 6t$

The factored form is $(v + 6t)(v - 6t)$

21. a) Factor out the GCF.

$$8(d^2 - 4e^2) \quad \leftarrow \text{Continue to factor the difference of squares.}$$

$$\sqrt{d^2} = d$$

$$\sqrt{4e^2} = 2e$$

The factored form is $8(d + 2e)(d - 2e)$.

b) $\sqrt{25m^2} = 5m$

$$\sqrt{\frac{1}{4}n^2} = \frac{1}{2}n$$

The factored form is $\left(5m + \frac{1}{2}n\right)\left(5m - \frac{1}{2}n\right)$.

c) Factor out the GCF.

$$2y^2(9x^2 - 25y^2) \quad \leftarrow \text{Continue to factor the difference of squares.}$$

$$\sqrt{9x^2} = 3x$$

$$\sqrt{25y^2} = 5y$$

The factored form is $2y^2(3x + 5y)(3x - 5y)$.

d) This binomial cannot be factored as there are no common factors and it is not a difference of squares.

e) Although this binomial is expressed as a difference (subtraction), it cannot be factored over the integers or even rational numbers since the terms are not perfect squares.

f) $\sqrt{\frac{x^2}{16}} = \frac{x}{4}$

$$\sqrt{\frac{y^2}{49}} = \frac{y}{7}$$

The factored form is $\left(\frac{x}{4} + \frac{y}{7}\right)\left(\frac{x}{4} - \frac{y}{7}\right)$.