Activity 1.2.5: Factoring Perfect Square Trinomials Total points = 31

Answers

1.
$$16x^2 - 24xy + 9y^2 \checkmark$$

= $(4x)^2 - 2(4x)(3y) + (3y)^2 \checkmark$
= $(4x - 3y)^2 \checkmark$
2. $4x^2 + 20x + 25 \checkmark$

2.
$$4x^2 + 20x + 25\checkmark$$

= $(2x)^2 + 2(2x)(5) + (5)^2\checkmark$
= $(2x+5)^2\checkmark$

3.
$$49a^2 - 84ab + 36b^2 \checkmark$$

= $(7a)^2 - 2(7a)(6b) + (6b)^2 \checkmark$
= $(7a - 6b)^2 \checkmark$

4.
$$121m^4 + 66m^2n + 9n^2\checkmark$$

= $(11m^2)^2 + 2(11m^2)(3n) + (3n)^2\checkmark$
= $(11m^2 + 3n)^2\checkmark$

5.
$$64a^2 - 32ab + 4b^2 \checkmark$$

 $= 4(16a^2 - 8ab + b^2) \checkmark$
 $= 4[(4a)^2 - 2(4a)(b) + (b)^2] \checkmark$
 $= 4(4a - b)^2 \checkmark$
6. $4x^4y^2 - 12x^2yz^3 + 9z^6 \checkmark$

6.
$$4x^4y^2 - 12x^2yz^3 + 9z^6\checkmark$$

= $(2x^2)^2 - 2(2x^2)(3z^3) + (3z^3)^2\checkmark$
= $(2x^2y - 3z^3)^2\checkmark$

7.
$$9x^2y^2 + 30xyz^2 + 25z^4$$

= $(3xy)^2 + 2(3xy)(5z^2) + (5z^2)^2$
= $(3xy + 5z^2)^2$

8.
$$16x^4 - 24x^2y + 9y^2\checkmark$$

= $(4x^2)^2 - 2(4x^2)(3y) + (3y)^2\checkmark$
= $(4x^2 - 3y)^2\checkmark$

9.
$$36x^2 - 84xy^3 + 49y^6 \checkmark$$

= $(6x)^2 - 2(6x)(7y^3) + (7y^3)^2 \checkmark$
= $(6x - 7y^3)^2 \checkmark$

10.
$$4x^2 + 28x + 49\checkmark$$

= $(2x)^2 + 2(2x)(7) + (7)^2\checkmark$
= $(2x+7)^2\checkmark$

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1. $16x^2 - 24xy + 9y^2$

 $= (4x - 3y)^{2} \checkmark$ 2. $4x^{2} + 20x + 25 \checkmark$

 $=(2x+5)^2$

 $= (7a - 6b)^2 \checkmark$

3. $49a^2 - 84ab + 36b^2 \checkmark$

4. $121m^4 + 66m^2n + 9n^2\checkmark$

 $= (11m^2 + 3n)^2 \checkmark$

5. $64a^2 - 32ab + 4b^2$

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 $=(2x^2y-3z^3)^2$

 $= (3xy + 5z^2)^2$

8. $16x^4 - 24x^2y + 9y^2\checkmark$

 $= (4x^2 - 3y)^2 \checkmark$ 9. $36x^2 - 84xy^3 + 49y^6 \checkmark$

 $= \left(6x - 7y^3\right)^2 \checkmark$

10. $4x^2 + 28x + 49\checkmark$

 $= (4x)^2 - 2(4x)(3y) + (3y)^2 \checkmark$

 $=(2x)^2+2(2x)(5)+(5)^2\checkmark$

 $= (7a)^2 - 2(7a)(6b) + (6b)^2 \checkmark$

 $= 4(16a^{2} - 8ab + b^{2})\checkmark$ $= 4[(4a)^{2} - 2(4a)(b) + (b)^{2}]\checkmark$ $= 4(4a - b)^{2}\checkmark$

 $= (2x^2)^2 - 2(2x^2)(3z^3) + (3z^3)^2 \checkmark$

 $=(3xy)^2+2(3xy)(5z^2)+(5z^2)^2$

 $= (4x^2)^2 - 2(4x^2)(3y) + (3y)^2 \checkmark$

 $= (6x)^2 - 2(6x)(7y^3) + (7y^3)^2 \checkmark$

 $= (2x)^2 + 2(2x)(7) + (7)^2 \checkmark$ = $(2x+7)^2 \checkmark$

 $= (11m^2)^2 + 2(11m^2)(3n) + (3n)^2 \checkmark$

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