

Name: Key
Mr. Beach

Date: _____

Quarter 3 - Quiz 2: Review

Factor the following expressions completely.

1) $y^3 - 49y$

GCF → DOTS

$$y(y^2 - 49)$$

$$y(y+7)(y-7)$$

2) $x^2y - y$

GCF → DOTS

$$y(x^2 - 1)$$

$$y(x+1)(x-1)$$

3) $18x^2 - 8$

GCF → DOTS

$$2(9x^2 - 4)$$

$$2(3x+2)(3x-2)$$

4) $3x^2 + 6x + 3$

GCF → Trinomial

$$3(x^2 + 2x + 1)$$

$$3(x+1)(x+1)$$

5) $4x^3 + 16x^2 - 20x$

GCF → Tri.

$$4x(x^2 + 4x - 5)$$

$$4x(x+5)(x-1)$$

6) $x^4 - 81$

DOTS → DOTS

$$(x^2 + 9)(x^2 - 9)$$

$$(x^2 + 9)(x+3)(x-3)$$

7) $cx^3 - 4cx$

$$cx(x^2 - 4)$$

$$cx(x+2)(x-2)$$

* 8) $2x^2 + 13x + 15$

Challenge

$$(2x+3)(x+5)$$

(tricky trinomial)

9) $3x^2 - 33x - 36$

$$3(x^2 - 11x - 12)$$

$$3(x - 12)(x + 1)$$

10) $2x^2 - 16x - 66$

$$2(x^2 - 8x - 33)$$

$$2(x - 11)(x + 3)$$

challenge

11) $4x^3 + 10x^2 - 24x$

~~scribble~~

$$2x(2x^2 + 5x - 12)$$

$$2x(2x - 3)(x + 4)$$

12) $20x^2 - 125$

$$5(4x^2 - 25)$$

$$5(2x + 5)(2x - 5)$$

13) $2x^3 - 2x$

$$2x(x^2 - 1)$$

$$2x(x + 1)(x - 1)$$

14) $36 - 4x^2$

$$4(9 - x^2)$$

$$4(3 + x)(3 - x)$$

15) Mia factored the binomial $x^4 - 16$. Did she factor it correctly? Explain why or why not.

$$\begin{aligned} &x^4 - 16 \\ &= (x^2 - 4)(x^2 + 4) \\ &= (x - 2)(x + 2)(x - 2)(x + 2) \end{aligned}$$

can't factor
sum of two squares

16) Factor completely: $x^4 - 5x^2 + 4$

$$(x^2 - 4)(x^2 - 1)$$

$$(x + 2)(x - 2)(x + 1)(x - 1)$$