

Grace

Que 1.1

17. $3x^2 - 5$ - Yes it's polynomial because it has a degree of 2.

19. $5 \rightarrow$ No it's not polynomial because its degree is 0

21. $\frac{3x^2 - 5}{x} \rightarrow$ yes it's polynomial
Degree is 2

23. $2y^3 - \sqrt{2} \rightarrow$ yes it's polynomial
8 is the degree.

25. $\frac{x^2 + 5}{x^3 - 1} \rightarrow$ yes it's polynomial
Degree 3

27. $(x^2 + 4x + 5) + (3x - 3)$
 $x^2 + 7x + 2$

29. $(x^3 - 2x^2 + 5x + 10) - (2x^2 - 4x + 3)$
 $x^3 - 2x^2 + 5x + 10 - (2x^2 - 4x + 3)$
 $x^3 - 2x^2 + 5x + 10 - 2x^2 + 4x - 3$
 $x^3 - 4x^2 + 9x + 7$

Group

$$\begin{aligned} 31 & (6x^5 + x^3 + x) + (5x^4 - x^3 + 3x^2) \\ & 6x^5 + x + 5x^4 + 3x^2 \\ & 6x^5 + 5x^4 + 3x^2 + x \\ & x(6x^4 + 5x^3 + 3x + 1) \end{aligned}$$

$$\begin{aligned} 33 & (x^2 - 3x + 1) + 2(3x^2 + x - 4) \\ & x^2 - 3x + 1 + 2(3x^2 + x - 4) \\ & x^2 - 3x + 1 + 6x^2 + 2x - 8 \\ & 7x^2 - x - 7 \end{aligned}$$

$$\begin{aligned} 35 & 6(x^3 + x^2 - 3) - 4(2x^3 - 3x^2) \\ & 6(x^3 - x^2 - 3) - 4(2x^3 - 3x^2) \\ & 6x^3 - 6x^2 - 18 - 8x^3 + 12x^2 \\ & 6(x^3 - x^2 - 3) - 4(2x^3 - 3x^2) \\ & 6x^3 - 6x^2 - 18 - 8x^3 + 12x^2 \\ & 6x^3 - 6x^2 - 18 - 8x^3 + 12x^2 \\ & - 2x^3 - 6x^2 - 18 + 12x^2 \\ & - 2(x^3 - 3x^2 + 9) \\ & = 2x^3 + 6x^2 - 18 \end{aligned}$$

$$\begin{aligned} 37 & (x^2 - x + 2) + (2x^2 - 3x + 5) - (x^2 + 1) \\ & x^2 - x + 2 + 2x^2 - 3x + 5 - 1(x^2 + 1) \\ & x^2 - x + 7 + 2x^2 - 3x - 1(x^2 + 1) \\ & 2(x^2 - 2x + 3) \\ & 2x^2 - 4x + 6 \end{aligned}$$

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$$\begin{aligned} 39 \quad & 9(y^2 - 3y + 4) - 6(1 + y^2) \\ & 9y^2 - 27y + 36 - 6 - 6y^2 \\ & 3y^2 - 27y + 30 \\ & 3y^2 - 9y + 10 \end{aligned}$$

$$\begin{aligned} 41 \quad & x(x^2 + x - 4) \\ & x^3 + x^2 - 4x \end{aligned}$$

$$\begin{aligned} 43 \quad & -2x^2(4x^3 + 5) \\ & -8x^5 - 10x^2 \\ & -8x^5 - 10x^2 \end{aligned}$$

$$\begin{aligned} 45 \quad & (x+1)(x^2 + 2x - 4) \\ & x(x^2 + 2x - 4) + 1(x^2 + 2x - 4) \\ & x^3 - 2x^2 - 4x \\ & 1(x^2 + 2x - 4) \\ & x^3 + 2x^2 - 4x + x^2 + 2x - 4 \\ & x^3 + 3x^2 - 4x + 2x - 4 \\ & x^3 - 3x^2 + 4x + 2x - 4 \\ & 3x^3 + 3x^2 - 2x - 4 \end{aligned}$$

$$\begin{aligned} 47 \quad & (x+2)(x+4) \\ & x(x+4) + 2(x+4) \\ & x^2 + 4x + 2x + 8 \end{aligned}$$

True

$$x^2 + 6x + 8$$

$$\begin{aligned} 49 \quad & (2x+5)(x+2) \\ & 2x(x+2) + 5(x+2) \\ & 2x^2 + 4x + 5x + 10 \\ & 2x^2 + 9x + 10 \end{aligned}$$

$$\begin{aligned} 51 \quad & (x-4)(x+2) - \\ & x(x+2) - 4(x+2) \\ & x^2 + 2x - 4x - 8 \\ & x^2 - 2x - 8 \end{aligned}$$

$$\begin{aligned} 53 \quad & (x-3)(x-2) \\ & x(x-2) - 3(x-2) \\ & x^2 - 2x - 3x + 6 \\ & x^2 - 5x + 6 \end{aligned}$$

$$\begin{aligned} 55 \quad & (2x+3)(x-2) \\ & 2x(x-2) + 3(x-2) \\ & 2x^2 - 4x + 3x - 6 \\ & 2x^2 - x - 6 \end{aligned}$$

48-49 1.1 → 12-103

57-58 1.2 → 15-121

Grade:

$$\begin{aligned} 57. & (-2x+3)(x-4) \\ & -2x(x-4) + 3(x-4) \\ & -2x^2 + 8x + 3x - 12 \\ & -2x^2 + 11x - 12 \end{aligned}$$

$$\begin{aligned} 59. & (-x-2)(-2x-4) \\ & -(-2x^2 - 4x) - 2(-2x-4) \\ & 2x^2 + 4x + 4x + 8 \\ & 2x^2 + 8x + 8 \end{aligned}$$

$$\begin{aligned} 61. & x(-2x+y) - 3y(-2x+y) \\ & -2x^2 + xy - 3y(-2x+y) \\ & -2x^2 + xy + 6xy - 3y^2 \\ & -2x^2 + 7xy - 3y^2 \\ & -2x^2 + 7xy - 3y^2 \end{aligned}$$

$$\begin{aligned} 63. & (-2x-3y)(3x+2y) \\ & -2x(3x+2y) - 3y(3x+2y) \\ & -6x^2 - 4xy - 9yx - 6y^2 \\ & -6x^2 - 13xy - 6y^2 \end{aligned}$$

$$\begin{aligned} 65. & (x-7)(x+7) \\ & x(x+7) - 7(x+7) \\ & x^2 + 7x - 7x - 49 \\ & x^2 - 49 \end{aligned}$$

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$$\begin{aligned} 67. & (2x+3)(2x-3) \\ & 2x(2x-3) - 3(2x-3) \\ & 4x^2 - 6x + 6x - 9 \\ & 4x^2 - 9 \end{aligned}$$

$$\begin{aligned} 69. & (x+4)^2 \\ & (x+4)(x+4) \\ & x(x+4) + 4(x+4) \\ & x^2 + 4x + 4x + 16 \\ & x^2 + 8x + 16 \end{aligned}$$

$$\begin{aligned} 71. & (x-4)^2 \\ & (x-4)(x-4) \\ & x(x-4) - 4(x-4) \\ & x^2 - 4x - 4x + 16 \\ & x^2 - 8x + 16 \end{aligned}$$

$$\begin{aligned} 73. & (3x+4)(3x-4) \\ & 3x(3x-4) - 4(3x-4) \\ & 9x^2 - 12x + 12x - 16 \\ & 9x^2 - 16 \end{aligned}$$

$$\begin{aligned} 75. & (2x-3)^2 \\ & (2x-3)(2x-3) \\ & 2x(2x-3) - 3(2x-3) \end{aligned}$$

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$$4x^2 - 6x - 6x + 9$$

$$4x^2 + 12x + 9$$

$$\begin{aligned} 77 & (x+y)(x-y) \\ & x(x-y)y(x-y) \\ & x^2 - xy + yx - y^2 \\ & x^2 - y^2 \end{aligned}$$

$$\begin{aligned} 79 & (3x+y)(3x-y) \\ & 3x(3x-y)y(3x-y) \\ & 9x^2 - 3xy + 3xy - y^2 \\ & 9x^2 - y^2 \end{aligned}$$

$$\begin{aligned} 81 & (x+y)^2 \\ & (x+y)(x+y) \\ & x(x+y)y(x+y) \\ & x^2 + xy + yx + y^2 \\ & x^2 + 2xy + y^2 \end{aligned}$$

$$\begin{aligned} 83 & (x-2y)^2 \\ & (x-2y)(x-2y) \\ & x(x-2y) - 2y(x-2y) \\ & x^2 - 2xy - 2xy + 4y^2 \\ & x^2 - 4xy + 4y^2 \end{aligned}$$

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85. $(x-2)^3$

$$x^3 - 6x^2 + 12x - 8$$

$$x(x^3 - 6x^2 + 12x - 8)$$

87. $(2x+1)^3$

$$8x^3 + 12x^2 + 6x + 1$$

89. $4x^3 - 3x^2 + x + 1$ divided by $x+2$

$$4x^3 - 3x^2 + x + 1$$

$$x+2$$

Divide $4x^3 - 3x^2 + x + 1$ $4x^3 - 3x^2 + x + 1 = 4x^2 - 11x^2 + x + 1$ ()

$$x+2$$

$$x+2$$

$$x+2$$

$$4x^2 - 11x^2 + x + 1$$

$$x+2$$

Divide $-11x^2 + x + 1$ $-11x^2 + x + 1 = -11x + 23x - 1$

$$x+2$$

$$x+2$$

$$x+2$$

$$= -11x + 23x + 1$$

$$x+2$$

Divide $23x + 1$ $23x + 1 = 23 + \frac{-45}{x+2}$

$$x+2$$

$$x+2$$

$$x+2$$

$$= 4x^2 - 11x + 23 + \frac{-45}{x+2}$$

$$= 4x^2 - 11x + 23 - \frac{45}{x-2}$$

$$x-2$$

Ques

91. $4x^3 - 3x^2 + x + 1$ divided by x^2

$$(4x^3 - 3x^2 + x + 1) \div x^2$$

$$4x^3 - 3x^2 + x + 1 \times x^2$$

$$4x^3 - 3x^2 + x + 1 \times x^2$$

93. $5x^4 - 3x^2 + x + 1$
 $\div x^2 + 2$

Div $5x^4 - 3x^2 + x + 1 \div x^2 + 2$ $5x^4 - 3x^2 + x + 1 = 5x^2 + \frac{-13x^2 + x + 1}{x^2 + 2}$

$$= 5x^2 + \frac{-13x^2 + x + 1}{x^2 + 2}$$

$$x^2 + 2$$

Div $\frac{-13x^2 + x + 1}{x^2 + 2} \div \frac{-13x^2 + x + 1}{x^2 + 2} = \frac{-13 + x + 27}{x^2 + 2}$

$$= 5x - 13 + \frac{x + 27}{x^2 + 2}$$

$$x^2 + 2$$

95. $4x^5 - 3x^2 + x + 1$ divide by $2x^3 - 1$

$$4x^5 - 3x^2 + x + 1$$

$$2x^3 - 1$$

Div $4x^5 - 3x^2 + x + 1 \div 2x^3 - 1$ $4x^5 - 3x^2 + x + 1 = 2x^2 - x^2 + x + 1$

$$2x^3 - 1$$

$$2x^3 - 1$$

$$2x^3 - 1$$

$$= 2x^2 - x^2 + x + 1$$

$$2x^3 - 1$$

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97. $2x^4 - 3x^3 + x + 1$ divide $2x^2 + x + 1$

$$\underline{2x^4 - 3x^3 }$$

$$2x^3 + x + 1$$

$$\underline{2x^4 - 3x^3 + x + 1} - \underline{2x^4 - 3x^3 + x + 1} = x + \underline{-4^2 + 1}$$

$$2x^3 + x + 1$$

$$2x^3 + x + 1$$

$$2x^3 + x + 1$$

$$= x + \underline{-4x^2 + 1}$$

$$2x^3 + x + 1$$

99. $-4x^3 + x^2 - 4$ divided by $x - 1$

$$\underline{-3x^2 - 4} - \underline{-4x^3 + x^2 - 4} = -4x^2 + \underline{-3x^2 - 4}$$

$$x - 1$$

$$x - 1$$

$$x - 1$$

$$= -4x^2 + \underline{-3x^2 - 4}$$

$$x - 1$$

$$\underline{-3x - 4} - \underline{-3x - 4} = \underline{-3 + -7}$$

$$x - 1$$

$$x - 1$$

$$x - 1$$

$$= -4x^2 - 3x - 3 + \underline{-7}$$

$$x - 1$$

$$= -4x^2 - 3x - 3 - \underline{7}$$

$$x - 1$$

101. $1 - x^2 + 4^2$ divided by $x^2 + x + 1$

$$\underline{1 - x^2 + 4^2}$$

$$x^2 + x + 1$$

$$= \underline{-x^2 + 257}$$

$$x^2 + x + 1$$

Q. 103

$$\frac{-x^2 + 257}{x^2 + x + 1} - \frac{x^2 + 257}{x^2 + x + 1} = \frac{-1 + x + 258}{x^2 + x + 1}$$

103 $x^3 - a^3$ divided by $x - a$

$$(x^3 - a^3) \div (x - a)$$

$$x^3 - a^3 = (x - a)(x^2 + ax + a^2)$$

$$(x - a) \cdot (x^2 + ax + a^2)$$

Ans: 1.2