

Polynomial Review

1. Complete the chart.

POLYNOMIAL	DEGREE	#OF TERMS	MONOMIAL BINOMIAL TRINOMIAL	VARIABLES	COEFFICIENTS	CONSTANT
$-r^2$	2	1	Monomial	r	-1	none
-2	0	1	Monomial	none	none	-2
$7b^2 + 8b^3$	3	2	Binomial	b	7, 8	none
$9v^5 - 9v^6 - v$	6	3	Trinomial	v	9, -9, -1	none
$3p - 3$	1	2	Binomial	p	3	-3
$6x^2 + 9x - 7$	2	3	Trinomial	x	6, 9	-7
h	1	1	Monomial	h	1	none

2. Circle the polynomials.

$\sqrt{56}$ $4x^2$ \sqrt{x} 14 $6x^{0.8}$ $\frac{4x}{11}$ $\frac{15}{x}$

3. Simplify each expression.

a) $(16n^2 - n^3 - 3) - (6n^2 + 6n^4 - 2n^3 + 5)$

$$\begin{aligned}
 & \boxed{16n^2} - \boxed{n^3} - \underline{\underline{3}} - \boxed{6n^2} - \boxed{6n^4} + \boxed{2n^3} - \underline{\underline{5}} \\
 & \underline{\underline{-6n^4 + n^3 + 10n^2 - 8}}
 \end{aligned}$$

b) $(7a^2 - 6a^3 + 7) + (1 - 6a^3 - 10a)$

$$\begin{aligned}
 & \boxed{7a^2} - \boxed{6a^3} + \underline{\underline{7}} + \underline{\underline{1}} - \boxed{6a^3} - \boxed{10a} \\
 & = \underline{\underline{-12a^3 + 7a^2 - 10a + 8}}
 \end{aligned}$$

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a) $(16n^2 - n^3 - 3) - (6n^2 + 6n^4 - 2n^3 + 5)$

$$\begin{aligned} & \boxed{16n^2} - \boxed{n^3} - \underline{\underline{3}} - \boxed{6n^2} - \boxed{6n^4} + \boxed{2n^3} - \underline{\underline{5}} \\ & \underline{\underline{-6n^4 + n^3 + 10n^2 - 8}} \end{aligned}$$

b) $(7a^2 - 6a^3 + 7) + (1 - 6a^3 - 10a)$

$$\begin{aligned} & \boxed{7a^2} - \boxed{6a^3} + \underline{\underline{7}} + \underline{\underline{1}} - \boxed{6a^3} - \boxed{10a} \\ & \underline{\underline{-12a^3 + 7a^2 - 10a + 8}} \end{aligned}$$

c) $(8x^3y + 5xy - 2x^4y^2) + (2x^3y + 7xy + 3x^4y^2)$

$$\begin{aligned} & \boxed{8x^3y} + \boxed{5xy} - \boxed{2x^4y^2} + \boxed{2x^3y} + \boxed{7xy} + \boxed{3x^4y^2} \\ & \underline{\underline{y^2 + 10x^3y + 12xy}} \end{aligned}$$

d) $(7y - 2x^2y + 2x^2y^2) - (4y + 8x^2y^2 - 4x^2y)$

$$\begin{aligned} & \boxed{7y} - \boxed{2x^2y} + \boxed{2x^2y^2} - \boxed{4y} - \boxed{8x^2y^2} + \boxed{4x^2y} \\ & \underline{\underline{-6x^2y^2 + 2x^2y + 3y}} \end{aligned}$$

4. Find the product.

a) $8p(2p + 6)$

$$= 16p^2 + 48p$$

b) $4k(7k - 1)$

$$= 28k^2 - 4k$$

c) $2(8x - 3)$

$$= 16x - 6$$

d) $4(n - 2)$

$$= 4n - 8$$

5. Divide.

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$$= 4n - 8$$

5. Divide.

a) $\frac{30v^3 + 90v^2 + 50v}{10v}$

$$= \frac{30v^3}{10v} + \frac{90v^2}{10v} + \frac{50v}{10v}$$
$$= \underline{3v^2 + 9v + 5}$$

b) $\frac{40x^8 + 16x^7 - 32x^6}{-8x^2}$

$$= \frac{40x^8}{-8x^2} + \frac{16x^7}{-8x^2} + \frac{-32x^6}{-8x^2}$$
$$= \underline{-5x^6 - 2x^5 + 4x^4}$$

$$c) \frac{-54v^4 + 66v^3 + 36v^2}{6v^2}$$

$$= \frac{-54v^4}{6v^2} + \frac{66v^3}{6v^2} + \frac{36v^2}{6v^2}$$

$$= \underline{\underline{-9v^2 + 11v + 6}}$$


$$d) \frac{-48x^5 - 60x^4 + 156x^3}{-12x^3}$$

$$= \frac{-48x^5}{-12x^3} - \frac{60x^4}{-12x^3} + \frac{156x^3}{-12x^3}$$

$$= \underline{\underline{4x^2 + 5x - 13}}$$

6. Determine the area. $A = L \times W$


a)



$5g(6g - 11)$

$$= \underline{\underline{30g^2 - 55g}}$$

b)



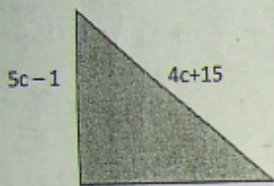
$10k(2k - 3)$

$$= \underline{\underline{20k^2 - 30k}}$$

7. Determine the missing side, given the perimeter.

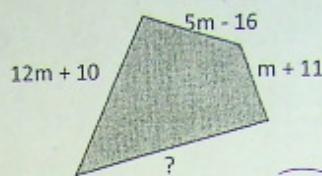
7. Determine the missing side, given the perimeter.

a) $P = 12c + 25$



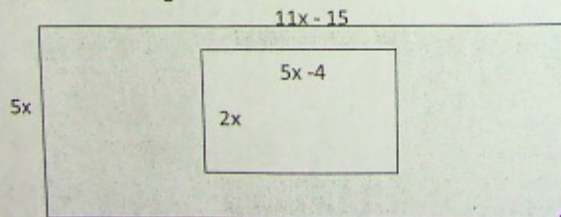
$$\begin{aligned} & \overbrace{12c+25} - \overbrace{(5c-1)} - \overbrace{(4c+15)} \\ & \boxed{12c} + \boxed{25} - \boxed{5c} + \boxed{1} - \boxed{4c} - \boxed{15} \\ & = 3c + 11 \end{aligned}$$

b) $P = 21m - 50$



$$\begin{aligned} & 21m - 50 - (12m + 10) - (5m - 16) - (m + 11) \\ & \boxed{21m} - \boxed{50} - \boxed{12m} - \boxed{10} - \boxed{5m} + \boxed{16} - \boxed{1m} - \boxed{11} \\ & = 3m - 55 \end{aligned}$$

8. Determine the area of the shaded region.



Larger
 $5x \cdot (11x - 15)$
 $= 55x^2 - 75x$

Smaller
 $2x \cdot (5x - 4)$
 $= 10x^2 - 8x$

Answer $55x^2 - 75x - (10x^2 - 8x)$
 $\boxed{55x^2} - 75x - \boxed{10x^2} + 8x$
 $= 45x^2 - 67x$

