

P-31 Rewrite each expression in the form x^n .

1. $x \cdot x = x^2$

6. $x^3 \cdot x^4 = x^7$

2. $x \cdot x \cdot x \cdot x \cdot x = x^5$

7. $x^5 \cdot x^{20} = x^{25}$

3. $x^2 \cdot x = x^3$

8. $\frac{x^5}{x^3} = \frac{x \cdot x \cdot x \cdot x \cdot x}{x \cdot x \cdot x} = x^2$

4. $x^2 \cdot x^2 = x^4$

9. $(x^3)^2 = (x^3) \cdot (x^3) = x^6$

5. $\frac{x^2}{x} = x^1$ or x

10. $(x^7)^{10} = x^{70}$

Complete the following formulas and translate them into English.

	Formula	Translation
11.	$x^m \cdot x^n = \underline{x^{m+n}}$	<u>add exponents when multiplying</u>
12.	$(x^n)^p = \underline{x^{n \cdot p}}$	<u>multiply exponents when raising to another power</u>
13.	$\frac{x^m}{x^n} = \underline{x^{m-n}}$	<u>subtract bottom exponent from top exponent when dividing</u>

Find the degree of the given polynomial or write a polynomial with the required degree.

	Polynomial	Degree
14.	$3x^2 - 2x + 8$	<u>2</u>
15.	$x^3 - x^2 + x - 1$	<u>3</u>
16.	$-2x^{18} + 5x^{12} + 3x^{11} - 17x^5 + 3x^2$	<u>18</u>
17.	$x^{17} - 1$	<u>17</u>
18.	<u>$2x + 3$</u>	1
19.	<u>$7x^3 - 18x^2 + x - 4$</u>	3
20.	<u>$x^2 - 4x - 21$</u>	2