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***Find each sum, difference, and product*:**

#2. $(4m^3 - 3m^2 + 5) + (-3m - m^2 + 5) =$

Answer:

$4m^3-3m^3-3m^2-m^2+5+5 = m^3 - 2m^2 + 25$

#4. $(8p^2 - 5p) - (3p^2 - 2p + 4) =$

Answer:

$8p^2 - 3p^2 - 5p - 2p + 4 = 5p^2 - 7p + 4$

#6. $- (8x^3 + x - 3) + (2x^3 + x^2) - (4x^2+3x-1) =$

Answer:

$-8x^3 + 2x^3 + x^2 - 4x^2 + x + 3x - 3 - 1 = -6x^3 + 3x^2 + 4x - 4$

#8. $8x^2y - 3xy^2 + 2x^2y - 9xy^2 =$

Answer:

$8x^2y + 2x^2y - 3xy^2 - 9xy^2 = 10x^2y - 12xy^2$

#10. $(y-3) . (y-9) =$

Answer:

Distribute and multiply them.

$(y.y) (y.9) (-3.y) (-3.-9) =$

$y^2 - 9y - 3y - 27 = y^2 - 12y - 27$

#12. $(5m - 6) . (3m+4) =$

Distribute and multiply them

$(5m.3m)\ (5m.4)\ (-6.3m)\ (-6.4) = 15m^2 + 20m - 18m - 24$

$= 15m^2 + 2m - 24$

14. $2b^3\ (b^2 - 4b + 3) =$

Answer:

$2b^3\ (b^2 - 4b + 3) = 2b^5 - 8b^4 + 6b^3$

16. $(8s - 3t)\ (8s + 3t) =$

Answer:

$(8s.8s)\ (8s.3t)\ (-3t.8s)\ (-3t.3t) = 64s^2 + 24st - 24st - 9t^2$

$= 64s^2 - 9t^2$

18. $(a-6b)^2 =$

Answer:

$(a-6b)\ (a-6b) = a^2 - 6ab - 6ab + 36b^2$

$= a^2 - 12ab + 36b^2 \ / \ a^2 + 36b^2 - 12ab$

20. $(2z^4-3y)^2 =$

Answer:

$(2z^4-3y)\ (2z^4-3y) = (2z^4.2z^4)\ (2z^4.-3y)\ (-3y.2z^4)\ (-3y.-3y)$

$= 4z^8 - 6yz^5 - 6yz^5 + 9y^2$

21. $(2z-1)\ .\ (-z^2+3z-4) = 2z^3+5z^2-11z + 4$

Answer:

$z-z^2+3z-4$

$2z-1 \quad x$

$= \quad -z^2-3z+4$

$2z^3+5z^2 - 8z \quad +$

$= 2z^3+5z^2-11z + 4$

23. (m-n+k) . (m.2n-3k) =

Answer:

m+2n-3k

m - n + k x

= 2km+2kn-3k²

mn-2n²+3kn

m²+mn-3km +

= m² +3mn - km -2n² + 5kn -3k²

24. (r - 3s+1) (2r -s+1) =

Answer:

r - 3s + 1

2r - s + 1 x

= r-3s+1

rs+3s²-s

2r-6rs+2r +

= 2r² - 5rs + 3r + 3s - 4s + 1

25. $(a+b+2c)^2 = a^2 + 2ab + 4ac + b^2 + 4bc + 4c^2$

$a + b + 2c \times a + b + 2c = a^2 + 2ab + 4ac + b^2 + 4bc + 4c^2$

26. $(k-y+3m)^2 =$

Answer:

$(k-y+3m) . (k-y+3m) = k^2 + 6km + y^2 - ym^2$

Factor the greatest common factor from each polynomial:

32. $2p^5 - 10p^4 + 16p^3 =$

$2p^5 = 2. p . p . p . p . p$

$10p^4 = 2. 5. p . p . p . p$

$16p^3 = 2.2.2.2.p.p.p$

GCF: $2. p . p .p$

GCF: $2p^3$

$= 2p^3 (p^2 - 5p + 8)$