

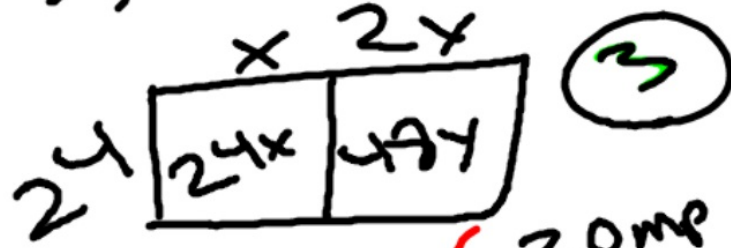
Exercises

Factor each polynomial.

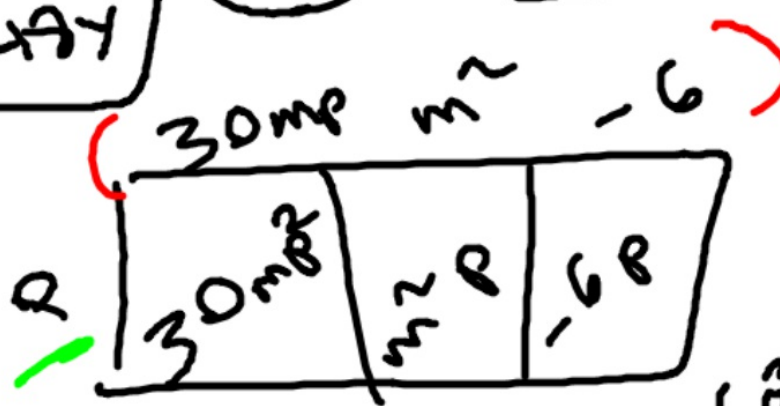
1. $24x + 48y$

$24(x + 2y)$

①



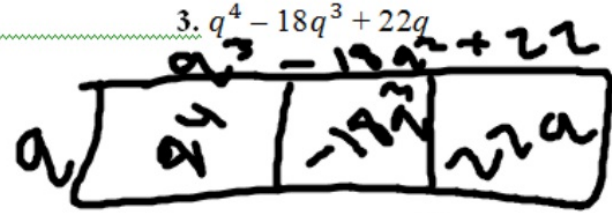
②



$p(30mp^2 + m^2p - 6p)$

2. $30mp^2 + m^2p - 6p$

3. $q^4 - 18q^3 + 22q$



$q(q^3 - 18q^2 + 22)$

4. $9x^2 - 3x$

$3x(3x - 1)$



5. $4m + 6p - 8mp$

⑤ $2(2m + 3p - 4mp)$

6. $45r^3 - 15r^2$

⑥ $15r^2(3r - 1)$

13. $x^2 + 2x + x + 2$

14. $6y^2 - 4y + 3y - 2$

15. $4m^2 + 4mp + 3mp + 3p^2$

③ "grouping"
 $(x^2 + 2x) + (x + 2)$

$x(x+2) + (x+2)$

$x^a +$

a

$= a(x+1)$

$= (x+2)(x+1)$

let $a = x+2$

$x \mid x = \frac{3}{4} = \frac{4}{4}$

check:

	x	1
x	x^2	x
2	$2x$	2

13. $x^2 + 2x + x + 2$

14. $6y^2 - 4y + 3y - 2$

15. $4m^2 + 4mp + 3mp + 3p^2$

(15) $(4m^2 + 4mp) + (3mp + 3p^2)$

$4m(\underline{m+p}) + 3p(\underline{m+p})$

$(m+p)(4m+3p)$

$(m+p)(4m+3p)$

Exercises

Solve each equation. Check your solutions.

1. $x(x+3) = 0$

$x=0$ | $x+3=0$
 $x=-3$

2. $3m(m-4) = 0$

② $m=0$
 $m=4$

3. $(r-3)(r+2) = 0$

③ $r-3=0$ | $r+2=0$
 $r=3$ | $-2-2$
 $r=-2$

4. $3x(2x - 1) = 0$

$3x = 0$
 $x = 0$
 $2x - 1 = 0$
 $2x = 1$
 $x = \frac{1}{2}$

5. $(4m + 8)(m - 3) = 0$

$4m + 8 = 0$
 $-8 \quad -8$
 $m = 3$
 $4m = -8$
 $m = -2$

6. $5t^2 = 25t$

$5t^2 - 25t = 0$
 $5t(t - 5) = 0$
 $5t = 0$
 $t = 0$
 $t - 5 = 0$
 $t = 5$