

Thursday: Career of the Week

Career Name: Market Manager

What do schooling do you need for this job?

Yes, Bach, marketing, business, or Comm

What is the average salary?

\$87,000 \$66,000 - 185,000
median 128,750

Do you need to live a certain region of the country?

No

How competitive is this career?

18,200

II. Greatest Common Monomial Factor

Factor, write prime if prime.

$$12a^3b + 15ab^3 = 3ab(4a^2 + 5b^2)$$

- | | |
|----------------------|---------------------------|
| 1. $6x + 3$ | 8. $12x^2 - 9x + 15$ |
| 2. $24x^2 - 8x$ | 9. $3n^3 - 12n^2 - 30n$ |
| 3. $6x - 12$ | 10. $9m^2 - 4n + 12$ |
| 4. $2x^2 + 8x$ | 11. $2x^3 - 3x^2 + 5x$ |
| 5. $4x + 10$ | 12. $13m + 26m^2 - 39$ |
| 6. $10x^2 + 35x$ | 13. $17x^2 + 34x + 51$ |
| 7. $10x^2y - 15xy^2$ | 14. $18m^2n^4 - 12m^2n^3$ |

2. $8x(3x-1)$ 10. Prime
 4. $2x(x+4)$ 12. $13m(1+2m-3m^2)$
 6. $5x(2x+7)$ 14. $6m^2n^2(3n^2-2n+4)$
 8. $3(4x^2-3x+5)$

2) $x^2 + 5x + 4x + 20$

$$(x+4)(x+5)$$

4) $x^2 + 2x + 5x + 10$

$$(x+5)(x+2)$$

6) $x^2 + 10x^2 + 5x + 50$

$$(x^2+5)(x+10)$$

8) $2x^3 + x^2 + 8x + 4$

$$(x^2+4)(2x+1)$$

$$a^2 - 36 = (a+6)(a-6)$$

$$3x^2 - 48 = 3(x^2 - 16) = 3(x+4)(x-4)$$

Factor, write prime if prime.

1. $x^2 - 1$ 2. $(x+13)(x-3)$
 2. $x^2 - 9$ 4. $(x+5)(x-5)$
 3. $x^2 + 4$ 6. $(2x+5)(2x-5)$
 4. $x^2 - 25$ 8. $(x+x)(a-x)$
 5. $9y^2 - 16$ 10. $(x+4y)(x-4y)$
 6. $4x^2 - 25$
 7. $9x^2 - 1$
 8. $a^2 - x^2$
 9. $25 - m^2$
 10. $x^2 - 16y^2$
 11. $25m^2 - n^2$

12. $-x^2 + 16$ $-1(x^2-16)$
 13. $36m^2 - 121$ $-1(x+4)(x-4)$
 14. $2x^2 - 8$ 14. $2(x+2)(x-2)$
 15. $25 + 4x^2$ 15. $2(x+2)(x-2)$
 16. $4a^2 - 81b^2$ 16. $(2a+9b)(2a-9b)$
 17. $12x^2 - 75$
 18. $a^2b - b^3$
 19. $-98 + 2x^2$
 20. $5x^2 - 45y^2$
 21. $9x^4 - 4$
 22. $16x^4 - y^2$

18. $b(a+b)(a-b)$
 20. $5(x+3y)(x-3y)$
 22. $(4x^2-y)(4x^2+y)$

$$ax^2 + bx + c$$

Steps

1. Decide factors of a
2. Decide factors of c
3. Place two factors for a in the front part of parenthesis and 2 factors for c in the back
4. Check to make sure you choose correct factors

Example 1

$$x^2 - 9x - 36$$

a	b	c
1	-36	
	1 36	
	2 18	
	3 12	
	6 6	

~~$$(x+6)(x-6)$$

$$x^2 + 6x - 6x - 36$$~~

~~$$(x-2)(x+18)$$

$$-2x + 18x$$~~

$$(x+3)(x-12)$$

$$+3x - 12x$$

Example 2

$$6x^2 - 19x + 15$$

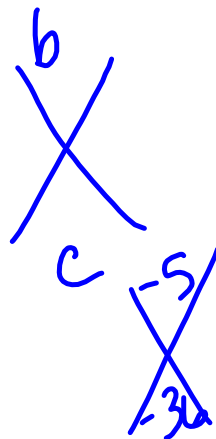
a	c
6	15
1 6	3 5
2 3	

$$(2x-3)(3x-5)$$

$$-9x - 15x$$

Steps

1. Make a list of factors of c
2. Out of the list, which adds to b?
3. Set up parenthesis (x)(x)
4. Place factors from step 2 into parenthesis



Example 3

Add -5

$$\begin{array}{r}
 x^2 - 5x - 36 \\
 \underline{-36} \\
 +1 - 36 = -36 \\
 +2 - 18 = -16 \\
 +3 - 12 = -9 \\
 +4 - 9 = -5 \\
 +6 - 6 = 0
 \end{array}$$

$$(x+4)(x-9)$$

Example 4

$$\begin{array}{r}
 x^2 + 13x + 15 \\
 \underline{15} \\
 +1 + 15 = 16 \\
 +3 + 5 = 8
 \end{array}$$

Prime
(Does not factor)

Steps

1. Multiply a and c

2. Make a list of factors of ac

3. Out of the list, which adds to b?

3. Split b to be the two factors, keep ax^2 and c the same

4. Group

$$\begin{array}{r} \text{|||} \\ \hline 18 \end{array}$$

Example 5

$$3x^2 + 11x + 6$$

$$a \cdot c = 18$$

$$1 \quad 18$$

$$2 \quad 9$$

$$3 \quad 6$$

$$\underline{3x^2 + 2x} + \underline{9x + 6}$$

$$x(3x+2) + 3(3x+2)$$

$$(3x+2)(x+3)$$

Example 6

$$8x^2 - 14x - 15$$

$$a \cdot c = -120$$

$$1 \quad 120$$

$$2 \quad 60$$

$$3 \quad 40$$

$$5 \quad 24$$

$$6 \quad -20$$

$$\underline{8x^2 + 6x} - \underline{20x - 15}$$

$$2x(4x+3) - 5(4x+3)$$

$$(4x+3)(2x-5)$$

C (+)
mult (+)

(-)(-)

(+)(+)

B
Adding
+ (+)(+)
- (-)(-)

C (-)
mult (-)

(+)(-)

B
(Adding)
Big# + Small#
- + = -
+ - = +