

Topic: Greatest common factor**Question:** Factor the polynomial.

$$10x^2y^2 - 5xy^3$$

Answer choices:

A $x(2xy - xy^2)$

B $5x^2(y^2 - xy)$

C $5xy^2(2x - y)$

D $y^2(2x^2 - x)$



Solution: C

We can see that each term in the numerator has a factor of 5, a factor of x , and a factor of y^2 , so the greatest common factor is $5xy^2$.

$$10x^2y^2 - 5xy^3$$

$$5xy^2(2x - y)$$



Topic: Greatest common factor

Question: Identify the greatest common factor of the polynomial.

$$3s^4t^2v^2 - 6s^3tv + 15s^2t^3v^3$$

Answer choices:

- A $3s^2tv$
- B $3s^2t^2v$
- C $3s^2tv^2$
- D $3s^3tv$



Solution: A

We need to look for factors that are shared by the terms $3s^4t^2v^2$, $6s^3tv$, and $15s^2t^3v^3$. We can see that

- 3 is the greatest common factor of 3, 6, and 15
- s^2 is the greatest common factor of s^4 , s^3 , and s^2
- t is the greatest common factor of t^2 , t , and t^3
- v is the greatest common factor of v^2 , v , and v^3

Putting these common factors together gives a greatest common factor of $3s^2tv$.



Topic: Greatest common factor**Question:** Factor the polynomial.

$$6t^4x - 3t^3x - 45t^2x$$

Answer choices:

- A $(3t^2x)(2t^2 - t - 15)$
- B $(3t^2x)(2t^2 + t - 15)$
- C $(3tx)(2t^4 - 7t^2 - 15)$
- D $(3tx)(2t^4 - t^2 - 15)$



Solution: A

We need to look for factors that are shared by the terms $6t^4x$, $3t^3x$, and $45t^2x$. We can see that

- 3 is the largest common integer factor
- t^2 is the largest power of t that's a common factor
- x is the largest power of x that's a common factor

Putting these common factors together gives a greatest common factor of $3t^2x$. Factoring out the $3t^2x$ gives

$$(3t^2x)(2t^2 - t - 15)$$

