

Practice

Factoring – Greatest Common Factor

Answer these problems, then check your answers using the key on the next page. If you missed something, look at the solutions after the answer key, and if you still don't understand, watch the review video again.

#1) Factor this expression completely: $5ax^2y - 10xy$

#2) Factor this expression completely: $4a^2b^2c - 12ab^2c^3$

#3) Factor this expression completely: $6x^2 - 12xy + 3xz$

#4) Factor this expression completely: $x^5 + x^4 - x^3 + x^2$

#5) Factor this expression completely: $7x^2y^2z^3 + 14x^2yz^2 - 21axyz^2$

#6) Factor this expression completely: $\frac{1}{4}x^2y + \frac{3}{2}xy^3$

Answers:

#1) $5xy(ax-2)$

#2) $4ab^2c(a-3c^2)$

#3) $3x(2x-4y+z)$

#4) $x^2(x^3+x^2-x+1)$

#5) $7xyz^2(xyz+2x-3a)$

#6) $\frac{1}{2}xy\left(\frac{1}{2}x+3y^2\right)$

Solutions:

#1) Factor this expression completely: $5ax^2y - 10xy$

$$\underline{5axxy} - \underline{2 \cdot 5xy}$$

$$\boxed{5xy(ax - 2)}$$

#2) Factor this expression completely: $4a^2b^2c - 12ab^2c^3$

$$\underline{4aabbcc} - \underline{4 \cdot 3abbccc}$$

$$\boxed{4ab^2c(a - 3c^2)}$$

#3) Factor this expression completely: $6x^2 - 12xy + 3xz$

$$\underline{3 \cdot 2xx} - \underline{3 \cdot 4xy} + \underline{3xz}$$

$$\boxed{3x(2x - 4y + z)}$$

#4) Factor this expression completely: $x^5 + x^4 - x^3 + x^2$

$$\underline{xxxxx} + \underline{xxxx} - \underline{xxx} + \underline{xx}$$

$$\boxed{x^2(x^3 + x^2 - x + 1)}$$

#5) Factor this expression completely: $7x^3y^2z^3 + 14x^2yz^2 - 21xyz^2$

$$\underline{7xxyyzzz} + \underline{2 \cdot 7xxyyzz} - \underline{7 \cdot 3axyzz}$$

$$\boxed{7xyz^2(xyz + 2x - 3a)}$$

#6) Factor this expression completely: $\frac{1}{4}x^2y + \frac{3}{2}xy^3$

$$\underline{\frac{1}{2} \cdot \frac{1}{2} xx y} + \underline{\frac{1}{2} \cdot 3 x y y y}$$

$$\boxed{\frac{1}{2}xy\left(\frac{1}{2}x + 3y^2\right)}$$