

Algebra 2 - Polynomial Operations and Identities - Test

Common Core A-APR.A.1, A-APR.C.4 · maths-pdf.fr/en/

Name: _____ Class: _____ Date: ____/____/____

This 45-minute test on polynomial operations and identities has 9 questions worth 20 points in total. The questions move from direct skills to multi-step problems. Show your work, because partial credit is given for a correct setup and sound reasoning.

About this test

- Grade: Algebra 2
- Chapter: Polynomial Operations and Identities
- Standards: A-APR.A.1, A-APR.C.4
- Time: 45 minutes
- Total: 20 points

Question 1 - Add and subtract [2 pts]

Let $A = 4x^2 - 3x + 7$ and $B = x^2 + 5x - 2$.

- $A + B$ (1 point)
- $A - B$ (1 point)

Question 2 - Multiply [3 pts]

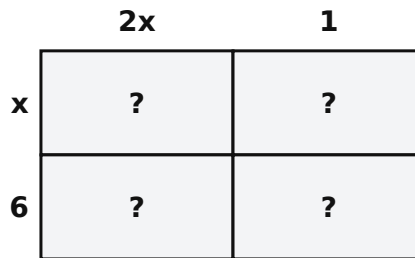
Expand and simplify.

- $(x-3)(x+8)$ (1 point)
- $(2x+1)(x^2-4x+3)$ (2 points)

Question 3 - Special products [2 pts]

Use an identity to expand.

- $(4x-1)^2$ (1 point)
- $(5x+6)(5x-6)$ (1 point)

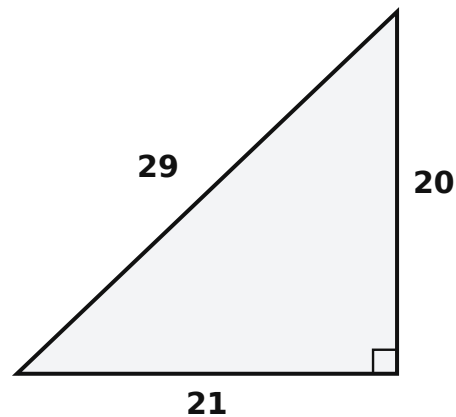
Question 4 - Area model [2 pts]

Rectangle with sides $x + 6$ and $2x + 1$.

A rectangle has side lengths $x+6$ and $2x+1$. Write its area as a polynomial in standard form.

Question 5 - Mental math [2 pts]

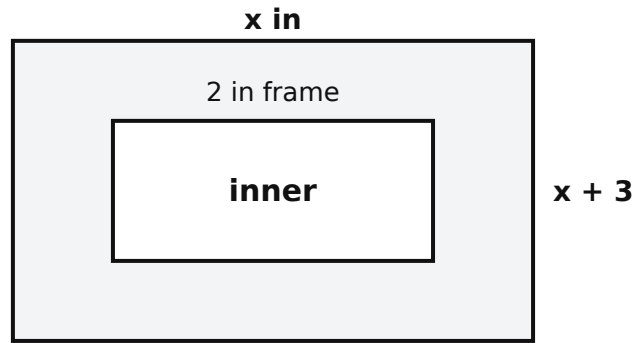
Use an identity (no calculator) to compute 98^2 and $61 \cdot 59$.

Question 6 - Pythagorean triple [3 pts]

Triangle for $x = 5$, $y = 2$.

Use $x=5$ and $y=2$ to generate the three sides of a right triangle with the identity $(x^2+y^2)^2 = (x^2-y^2)^2 + (2xy)^2$. Then verify the triple.

Question 7 - Frame area [2 pts]



Inner rectangle with a border.

A photo x inches by $x+3$ inches has a frame 2 inches wide on every side. Write the area of the frame alone as a polynomial.

Question 8 - Find the error [2 pts]

Aisha wrote $(3x-2)^2 = 9x^2 - 4$. Identify the error and give the correct expansion.

Question 9 - Degree and closure [2 pts]

Find the degree and leading coefficient of $(3x^2-1)(x^3+2x)$. Do not expand fully.