1. Algebraic Expressions

Simplify the following expression:

$(2x^2 - 3x + 1) + (x^2 + 4x - 5)$

a) $3x^2 + x - 4$

b) $3x^2 - 7x - 4$

c) $x^2 + x - 4$

d) $3x^2 + x + 6$

2. Trigonometry

If $\sin(30°) = 1/2$ and $\cos(30°) = \sqrt{3}/2$, what is the value of $\tan(30°)$?

a) $\sqrt{3}$

b) $1/\sqrt{3}$

c) 1

d) $2\sqrt{3}$

3. Exponents

Simplify the expression:

$(2x^3y^2)^2 \div (4x^4y^3)$

a) x^2y

b) x^2y^{-1}

c) x^4y

d) x^3y^2

4. Euclidean Geometry

Which of the following is true for a triangle when the Midpoint Theorem is applied?

a) The line joining the midpoints of two sides is parallel to the third side.

b) The line joining the midpoints of two sides is perpendicular to the third side.

c) The line joining the midpoints of two sides is equal in length to the third side.

d) The line joining the midpoints of two sides bisects the third side.

5. Finance and Growth

An amount of $1,000 is invested at an annual interest rate of 5%, compounded annually. What will the amount be after 3 years?

a) $1,150

b) $1,157.63

c) $1,200

d) $1,300

1. Answer: a) $3x^2 + x - 4$
2. Answer: b) $1/\sqrt{3}$
3. Answer: b) x^2y^{-1}
4. Answer: a) The line joining the midpoints of two sides is parallel to the third side.
5. Answer: b) $1,157.63