



Factorise fully

$$75 - 48x^2 \quad 3(25 - 16x^2)$$

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

At a summer camp, children pick a morning, an afternoon and an evening activity.

There are 4 morning and 7 evening activities to pick from.

Altogether there are 224 different ways to choose their activities.

How many afternoon activities are there?

$$4 \times 7 = 28$$

$$224 \div 28 = 8$$

Given  $f(x) = x^2 + 2$  and  
 $g(x) = x + 14$

Find the values of  $a$  such that  
 $f(a) = g(a)$

$$a^2 + 2 = a + 14$$

$$a^2 - a - 12 = 0$$

$$(a - 4)(a + 3) = 0$$

$$a = 4 \text{ or } a = -3$$

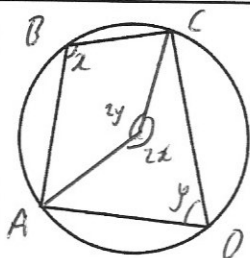
Work out

$$\frac{9}{4x^3} + \frac{5}{3x} - \frac{1}{2x}$$

$$\frac{27}{12x^3} + \frac{20x^2}{12x^3} - \frac{6x^2}{12x^3}$$

$$\frac{27 + 14x^2}{12x^3}$$

Give your answer as a single fraction in its simplest form



Let  $O$  be the centre of the circle.

Let  $\angle ABC = x$

$\angle ADC = y$

then

obtuse  $\angle AOC = 2x$

reflex  $\angle AOC = 2y$

Prove the opposite angles in a cyclic quadrilateral add to  $180^\circ$

since angles at a point add to  $360^\circ$

$$2x + 2y = 360$$

$$x + y = 180^\circ$$