



ABC is an isosceles triangle.

AB = BC

ACD is a straight line.

Angle BCD = x°

Prove angle ABC = $(2x - 180)^\circ$

$$\angle ACB = 180 - x$$

as the angles in a straight line add to 180° .

$\angle BAC = 180 - x$ as $\triangle ABC$ is isosceles.

As the angles in ABC add to 180°

$$\angle ABC + (180 - x) + (180 - x) = 180$$

$$\angle ABC + (360 - 2x) = 180$$

$$\angle ABC = 2x - 180^\circ$$

QED

Write 32 in the form 8^n

$$8^{\frac{5}{3}}$$

$$\sqrt[3]{8} = 2$$

$$2^5 = 32$$

$$f(x) = \frac{kx + 2}{4}$$

$$g(x) = 2x + 5$$

Given $fg(4) = -9.25$

Work out the value of k

$$g(4) = 13$$

$$f(13) = \frac{13k + 2}{4}$$

$$\frac{13k + 2}{4} = -9.25 \quad k = -3$$

How many odd numbers greater than 40,000 can be created using these digits

6 ways of arranging A, B, C

1 2 6 7 8

using each digit only once.

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6 - - - 1 6 ways

6 - - - 7 6 ways

8 - - - 1 6 ways

8 - - - 7 6 ways

7 - - - 1 6 ways