Initial:

$$(\exp(4x) \cdot \sin x)'$$

Let's simplify the expression:

$$4$$

Let's stop and think... Let's simplify the expression:

$$x$$

Let's simplify the expression:

$$(4x)$$

It turned out:

$$(4x)$$

Aren't you feeling old. Let's simplify the expression:

$$\exp(4x)$$

I think, its time to stop, but we must go on. It turned out:

$$\exp(4x)$$

Let's simplify the expression:

$$x$$

Would you like to commit a suicide? I would. Let's simplify the expression:

$$\sin x$$

We can see, that it is not good enough. It turned out:

$$\sin x$$

As you may want to continue. Let's simplify the expression:

$$\exp(4x) \cdot \sin x$$

It turned out:

$$\exp(4x) \cdot \sin x$$

Let's stop and think... Let's make a differential of:

$$4$$

It's going to be:

$$0$$

Let's make a differential of:

$$x$$

Aren't you feeling old. It's going to be:

$$1$$

I think, its time to stop, but we must go on. Let's make a differential of:

$$(4x)$$

It's going to be:

$$0x + 4 \cdot 1$$

Would you like to commit a suicide? I would. Let's make a differential of:

$$\exp(4x)$$

We can see, that it is not good enough. It's going to be:

$$(0x + 4 \cdot 1) \cdot \exp(4x)$$

As you may want to continue. Let's make a differential of:

$$x$$

It's going to be:

$$1$$

Let's stop and think... Let's make a differential of:

$$\sin x$$

It's going to be:

$$1 \cdot \cos x$$

Let's make a differential of:

$$\exp(4x) \cdot \sin x$$

Aren't you feeling old. It's going to be:

$$((0x + 4 \cdot 1) \cdot \exp(4x)) \cdot \sin x + \exp(4x) \cdot (1 \cdot \cos x)$$

I think, its time to stop, but we must go on. Let's simplify the expression:

$$0$$

Let's simplify the expression:

$$x$$

Would you like to commit a suicide? I would. Let's simplify the expression:

$$0x$$

We can see, that it is not good enough. It turned out:

$$0$$

As you may want to continue. Let's simplify the expression:

$$4$$

Let's simplify the expression:

$$1$$

Let's stop and think... Let's simplify the expression:

$$4 \cdot 1$$

It turned out:

$$4$$

Let's simplify the expression:

$$(0 + 4)$$

Aren't you feeling old. It turned out:

$$4$$

I think, its time to stop, but we must go on. Let's simplify the expression:

$$4$$

Let's simplify the expression:

$$x$$

Would you like to commit a suicide? I would. Let's simplify the expression:

$$(4x)$$

We can see, that it is not good enough. It turned out:

$$(4x)$$

As you may want to continue. Let's simplify the expression:

$$\exp(4x)$$

It turned out:

$$\exp(4x)$$

Let's stop and think... Let's simplify the expression:

$$(4 \cdot \exp(4x))$$

It turned out:

$$(4 \cdot \exp(4x))$$

Let's simplify the expression:

$$x$$

Aren't you feeling old. Let's simplify the expression:

$$\sin x$$

I think, its time to stop, but we must go on. It turned out:

$$\sin x$$

Let's simplify the expression:

$$(4 \cdot \exp(4x)) \cdot \sin x$$

Would you like to commit a suicide? I would. It turned out:

$$(4 \cdot \exp(4x)) \cdot \sin x$$

We can see, that it is not good enough. Let's simplify the expression:

$$4$$

As you may want to continue. Let's simplify the expression:

$$x$$

Let's simplify the expression:

$$(4x)$$

Let's stop and think... It turned out:

$$(4x)$$

Let's simplify the expression:

$$\exp(4x)$$

It turned out:

$$\exp(4x)$$

Aren't you feeling old. Let's simplify the expression:

$$1$$

I think, its time to stop, but we must go on. Let's simplify the expression:

$$x$$

Let's simplify the expression:

$$\cos x$$

Would you like to commit a suicide? I would. It turned out:

$$\cos x$$

We can see, that it is not good enough. Let's simplify the expression:

$$(1 \cdot \cos x)$$

As you may want to continue. It turned out:

$$\cos x$$

Let's simplify the expression:

$$\exp(4x) \cdot \cos x$$

Let's stop and think... It turned out:

$$\exp(4x) \cdot \cos x$$

Let's simplify the expression:

$$(4 \cdot \exp(4x)) \cdot \sin x + \exp(4x) \cdot \cos x$$

It turned out:

$$(4 \cdot \exp(4x)) \cdot \sin x + \exp(4x) \cdot \cos x$$