

> restart;

> A := int(x^5/sqrt(25+16*x^2), x);

$$A := \frac{1}{7680} \sqrt{25 + 16 x^2} (625 - 200 x^2 + 96 x^4)$$

> A;

$$\frac{1}{7680} \sqrt{25 + 16 x^2} (625 - 200 x^2 + 96 x^4)$$

> simplify(A);

$$\frac{1}{7680} \sqrt{25 + 16 x^2} (625 - 200 x^2 + 96 x^4)$$

> factor(A);

$$\frac{1}{7680} \sqrt{25 + 16 x^2} (625 - 200 x^2 + 96 x^4)$$

> f := unapply(A, x);

$$f := x \rightarrow \frac{1}{7680} \sqrt{25 + 16 x^2} (625 - 200 x^2 + 96 x^4)$$

> B := f(7)-f(2);

$$B := \frac{221321}{7680} \sqrt{809} - \frac{1361}{7680} \sqrt{89}$$

> Digits := 600;

Digits:= 600

> evalf(B);

817.99179993146297374446703879842351499105222906954874315273475665076419453
67927596020668726813275215376913533967846273242892450954947407512728029
32669878871154263123986646424894655350065404857302124701344570902318024
27970595844137850177388563065604118609003105067736974086451851753472416
09415756400651441698634092421308641011866536897382615397271229291177386
43813531721320082334010991940549789886003885722096103079609739596409401
46025386670879125811255454617174594464169134029700478423411697622302904
23940737750826869284865329303454341140967113230548663976386654115302437
162747101498781602144

> Digits := 16;

Digits:= 16

> evalf(B);

817.9917999314629

> A3 := int(x^5/sqrt(9*x^2-4*x), x = 2 .. 7);

$$A3 := -\frac{31232}{32805} \sqrt{7} - \frac{28}{19683} \ln(2) - \frac{28}{19683} \ln(8 + 3 \sqrt{7}) + \frac{3770837}{65610} \sqrt{7} \sqrt{59} \\ + \frac{28}{19683} \ln(61 + 3 \sqrt{7} \sqrt{59})$$

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