

**Readiness Assurance Test**

Choose the most appropriate response for each question.

11) Compute  $\int x e^{x^2+1} dx$ .

- (a)  $e^{x^2+1} + C$       (b)  $x e^{x^2+1} + C$       (c)  $\frac{1}{2} e^{x^2+1} + C$       (d)  $2 e^{x^2+1} + C$

12) Compute  $\int x^2 e^x dx$ .

- (a)  $x^2 e^x + C$       (b)  $2x e^x + C$       (c)  $(x^2 - 2x + 2)e^x + C$       (d)  $(x^2 - 2)e^x + C$

13) Which of the following sets describes where the polynomial  $f(x) = x^3(x-1)^2(x+1)$  is **negative**?

- (a)  $(-1, 0)$       (b)  $(0, 1)$       (c)  $(-1, 0) \cup (1, \infty)$       (d)  $(-\infty, -1) \cup (0, 1)$

14) Exactly one of the four vector fields below is conservative. Identify which one is conservative.

- (a)  $\langle 2xy, y^2 \rangle$       (b)  $\langle x^2, 2xy \rangle$       (c)  $\langle y^2, 2xy \rangle$       (d)  $\langle 2xy, 2xy \rangle$

15)

16)

17)

18)

19)

20)