

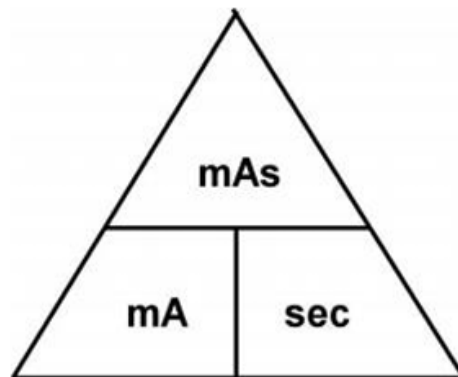
mAs Calculations 1

Radiographers have many methods at their disposal to control the exposure index of a radiographic image. Of all the primary exposure factors, **the exposure factor manipulated most often is mAs**. The mAs are the product of the milliamperage and exposure time.

To determine the missing exposure factor you will need to apply the following radiologic science formula:

$$\text{mA} \times \text{second} = \text{mAs}$$

The shortcut for remembering how to rearrange this formula to find an unknown variable is:



To use this shortcut:

Place your thumb over the unknown (what you want to find); what remains uncovered is the variation of the formula necessary to calculate the unknown.

Radiographically:

An INCREASE in mA will INCREASE EXPOSURE INDEX.

An INCREASE in exposure time will INCREASE EXPOSURE INDEX.

An INCREASE in mAs will INCREASE EXPOSURE INDEX.

Numeric Response

1. If the X-ray machine is set to 200 mA and the exposure time is 0.05 seconds, what is the mAs value for the X-ray exposure?
2. If the X-ray machine is set to 400 mA and the exposure time is 0.05 seconds, what is the mAs value for the X-ray exposure?
3. If the X-ray machine is set to 800 mA and the exposure time is 0.005 seconds, what is the mAs value for the X-ray exposure?
4. If the X-ray machine is set to 100 mA and the exposure time is 0.2 seconds, what is the mAs value for the X-ray exposure?
5. If the X-ray machine is set to 10 mA and the exposure time is 2 seconds, what is the mAs value for the X-ray exposure?
6. If the X-ray machine is set to 100 mA and the exposure time is 200 ms, what is the mAs value for the X-ray exposure?
7. If the X-ray machine is set to 500 mA and the exposure time is 10 ms, what is the mAs value for the X-ray exposure?
8. If the X-ray machine is set to 250 mA and the exposure time is 20 ms, what is the mAs value for the X-ray exposure?
9. If the X-ray machine is set to 20 mA and the exposure time is 2000 ms, what is the mAs value for the X-ray exposure?
10. If the X-ray machine is set to 100 mA and the exposure time is 500 ms, what is the mAs value for the X-ray exposure?
11. If the X-ray machine is set to 400 mA and the exposure time is 0.2 seconds, what is the mAs value for the X-ray exposure?
12. If the X-ray machine is set to 200 mA and the exposure time is 0.4 seconds, what is the mAs value for the X-ray exposure?
13. If the X-ray machine is set to 100 mA and the exposure time is 0.8 seconds, what is the mAs value for the X-ray exposure?
14. If the X-ray machine is set to 60 mA and the exposure time is 1.2 seconds, what is the mAs value for the X-ray exposure?
15. If the X-ray machine is set to 800 mA and the exposure time is 0.1 seconds, what is the mAs value for the X-ray exposure?
16. If the X-ray machine is set to 500 mA and the exposure time is 100 ms, what is the mAs value for the X-ray exposure?
17. If the X-ray machine is set to 250 mA and the exposure time is 200 ms, what is the mAs value for the X-ray exposure?
18. If the X-ray machine is set to 125 mA and the exposure time is 400 ms, what is the mAs value for the X-ray exposure?
19. If the X-ray machine is set to 630 mA and the exposure time is 50 ms, what is the mAs value for the X-ray exposure?
20. If the X-ray machine is set to 200 mA and the exposure time is 25 ms, what is the mAs value for the X-ray exposure?
21. If the X-ray machine is set to 300 mA and the desired exposure is 15 mAs, what exposure time should be used?
22. If the X-ray machine is set to 150 mA and the desired exposure is 15 mAs, what exposure time should be used?
23. If the X-ray machine is set to 400 mA and the desired exposure is 20 mAs, what exposure time should be used?

24. If the X-ray machine is set to 100 mA and the desired exposure is 2 mAs, what exposure time should be used?
25. If the X-ray machine is set to 10 mA and the desired exposure is 40 mAs, what exposure time should be used?
26. If the X-ray machine is set to 25 mA and the desired exposure is 100 mAs, what exposure time should be used?
27. If the X-ray machine is set to 200 mA and the desired exposure is 60 mAs, what exposure time should be used?
28. If the X-ray machine is set to 630 mA and the desired exposure is 80 mAs, what exposure time should be used?
29. If the X-ray machine is set to 500 mA and the desired exposure is 5 mAs, what exposure time should be used?
30. If the X-ray machine is set to 50 mA and the desired exposure is 1 mAs, what exposure time should be used?
31. An exposure requires 20 mAs using an exposure time of 0.10 seconds. What mA setting is needed?
32. An exposure requires 45 mAs using an exposure time of 3 seconds. What mA setting is needed?
33. An exposure requires 6 mAs using an exposure time of 0.06 seconds. What mA setting is needed?
34. An exposure requires 80 mAs using an exposure time of 0.2 seconds. What mA setting is needed?
35. An exposure requires 40 mAs using an exposure time of 400 ms. What mA setting is needed?
36. An exposure requires 6 mAs using an exposure time of 60 ms. What mA setting is needed?
37. An exposure requires 100 mAs using an exposure time of 500 ms. What mA setting is needed?
38. An exposure requires 100 mAs using an exposure time of 200 ms. What mA setting is needed?
39. An exposure requires 80 mAs using an exposure time of 400 ms. What mA setting is needed?
40. An exposure requires 80 mAs using an exposure time of 4000 ms. What mA setting is needed?

