

NUMBER BASES

TEXT: 4.3

LAST NAME	FIRST NAME	DATE
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1 (8 points). Convert the given number into base 10:

(a) 1001_2

(e) 12345_7

(b) 11001100_2

(f) 706050_8

(c) 23_{2023}

(g) $ACED_{16}$

(d) 101.01_2

(h) 3.14_5

2 (6 points). Convert the number 2026 into the specified base:

(a) base 2

(d) base 7

(b) base 3

(e) base 11

(c) base 5

(f) base 16

3 (1 point). Convert the number from base 8 into base 2:

44022665_8

4 (1 point). Convert the number from base 2 into base 4:

101100111000101011_2

5 (1 point). Convert the number from base 3 into base 9:

21020110221_3

6 (1 point). Convert the number from base 9 into base 3:

2.71828_9

7. Convert the given number into base 10:

(a) 32_4

(d) 317_{17}

(b) 333_6

(e) 777_{13}

(c) 666_9

(f) $DEDEDE_{15}$

8. Convert the number to a given base.

(a) 0.5 to base 6

(d) 0.5 to base 7

(b) $\frac{2}{3}$ to base 9

(e) $7.\overline{3}$ to base 3

(c) 0.75 to base 16

(f) 375.375 to base 8

9. Convert the number from base 2 into base 16:

11000000111111111101110

10. Convert the number from base 16 into base 2:

$FACADE_{16}$

11. What other words/phrases can you spell using hexadecimal (base 16) digits?

12. Convert the number to base 10:

$MATH_{36}$

PROBLEMS WITH ANSWERS.

Convert the number into a base 10 number.

1. 14_5

7. $3B_{12}$

13. 3223_6

2. 21_6

8. 241_6

14. 1436_7

3. 12_3

9. 101_2

15. $8A0BD_{15}$

4. 34_5

10. $4A7_{14}$

16. 110202_3

5. 14_8

11. 804_9

17. $100A4_{12}$

6. 78_9

12. 101001_2

18. 1010000101_2

Convert the base 10 number into the given base.

19. 12 into base 4

27. 2876 into base 4

20. 25 into base 2

28. 1765 into base 5

21. 43 into base 12

29. 1993 into base 7

22. 153 into base 5

30. 2000 into base 2

23. 203 into base 2

31. 4368 into base 12

24. 431 into base 4

32. 12562 into base 16

25. 543 into base 12

33. 44596 into base 36

26. 1023 into base 2

34. 15941 into base 36

ANSWERS.

1. 9

3. 5

5. 12

7. 47

9. 5

11. 625

13. 735

15. 438928

17. 20860

19. 30_4

21. 37_{12}

23. 11001011_2

25. 393_{12}

27. 230330_4

29. 5545_7

31. 2640_{12}

33. YES_{36}