

IT'S A BIG UNIVERSE Teaching Guidelines

Subject: Mathematics

Topics: Algebra--Powers, Roots and Scientific Notation

Grades: 6 - 9

Knowledge and Skills:

- Can do arithmetic operations with numbers that are expressed in scientific notation

Answers

Destination	Distance from Earth	Speed of travel (meters/second)	Time of travel (seconds)	Time of travel (years)
The moon	3.84×10^8 meters	walking 2 meters/sec	1.92×10^8	6.09
Mars*	5.6×10^{10} meters	bicycle 8 meters/sec	7.00×10^9	2.22×10^2
Jupiter*	5.9×10^{11} meters	automobile 30 meters/sec	1.97×10^{10}	6.24×10^2
Pluto*	4.3×10^{12} meters	train 50 meters/sec	8.60×10^{10}	2.73×10^3
Alpha Centauri (the nearest star)	4.07×10^{16} meters	propellor plane 80 meters/sec	5.09×10^{14}	1.61×10^7
Sirius (brightest star in the night sky)	8.23×10^{16} meters	jet plane 150 meters/sec	5.49×10^{14}	1.74×10^7
Center of the Milky Way galaxy	2.36×10^{20} meters	Space Shuttle 8000 meters/sec	2.95×10^{16}	9.35×10^8
Andromeda Galaxy	2.08×10^{22} meters	Light ray 3×10^8 meters/sec	6.93×10^{13}	2.20×10^6

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Determine the time it would take to travel to each destination by the given means of transportation:

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*At closest approach to Earth