1. Answer: **8**

Escapsevoli has 2 antennae, therefore his favorite number cannot be an odd number, because odd numbers are not divisible by 2. His favorite number also cannot be a factor of 36 (1, 2, 3, 4, 6, 9, 12, 18, 36). Because he does not like non-positive numbers, his favorite number cannot be 0. The only remaining number in the set is the number 8, Escapsevoli's favorite.

2. Answer: **32**

The distance from the Earth to the Andromeda Galaxy and back is a total of 56 light years. Since $112 \div 3.5 = 32$, then the shuttle needs 32 fuel cells to complete its trip.

3. Answer: **19**

Let Aldrin = d, Armstrong = t, Grissom = g, and Chaffee = c.

Aldrin is older than Armstrong by five years produces the equation:	$d = t + 5$
Armstrong is three more than twice Grissom's age:	$t = 3 + 2g$
Chaffee is three:	$c = 3$
Grissom is four years older than Chaffee:	$g = 4 + c$

By substituting in 3 for c, Chaffee's age, the other ages can be found.

$$c = 3$$
$$g = 4 + 3 = 7$$
$$t = 3 + 2g = 3 + 14 = 17$$
$$d = t + 5 = 17 + 5 = 22$$

Therefore, Chaffee is 3 and Aldrin is 22. Aldrin is $22 - 3 = 19$ years older than Chaffee.

4. Answer: **30**

Let one star equal a and the other star equal b.

$(a+b)^2 = 25$	(Given.)
$a^2 + 2ab + b^2 = 25$	(Simplify by foiling.)
$2ab + 10 = 25$	(Substitute 10 for $a^2 + b^2$.)
$2ab = 15$	(Subtract from both sides.)
$4ab = 30$	(Multiply both sides by 2.)

5. Answer: **3750**

250 aliens x 20 pounds each = 5000 total pounds in shoes
5000 pounds ÷ 4 pounds = 1250 groups of 5 shoes
1250 groups of 5 shoes = 6250 shoes total
10000 shoes – 6250 shoes = 3750 shoes left over

6. Answer: **8:28 p.m.**

12 episodes x 65 minutes each = 780 minutes total
29 commercial breaks x 2 minutes each = 58 minutes total
780 minutes + 58 minutes = 838 minutes total for the entire Marathon
838 minutes ÷ 60 minutes = 13 hours and 58 minutes total for the entire Marathon
13 hours and 58 minutes after 6:30 a.m. = 8:28 a.m.

7. Answer: **6**

Dimensional analysis can be used to solve this problem, by plugging in the given conversions and then cancelling out like units:

$$\text{deedoers} = \frac{16 \text{ bertons}}{} \cdot \frac{7 \text{ jindoes}}{8 \text{ bertons}} \cdot \frac{12 \text{ deedoers}}{28 \text{ jindoes}} = 6 \text{ deedoers}$$

8. Answer: **5**

Let Semids = s and Retrauqs = r, then use the given information to write a system of equations.

$s + r = 12$	→	$0.25s + 0.25r = 3.00$
$0.10s + 0.25r = 2.25$	→	$-\ 0.10s - 0.25r = -2.25$
		$0.15s = 0.75$
		$s = 5$

9. Answer: **Nelle**

Label the Martians from left to right as A, B, C, D, and E. The Martian that is smiling and has curved antennae is D.

(i) Since Neb is frowning, he must be either A or E. Since A and E both have curved antennae, then Neb must have curved antennae and so must Nelle.

(ii) Either Yrral or Nitsuj is B or D, while the other is C, since one of them is smiling and has three eyes while the other is also smiling but does not have three eyes.

(iii) Since Nivek, Nelle, and Nitsuj all have the same number of eyes, they must all have three eyes (B, D, and E) since there are only two Martians with two eyes. Therefore, Neb and Yrral must have two eyes (A and C).

(iv) By using the information in (iii) with (ii), Nitsuj must be B or D. Therefore, Yrral is C because he is smiling and has two eyes.

(v) By using the information in (iii) with (i), Neb must be A because he is frowning and has two eyes. Also, Nelle is D or E because she has curved antennae and three eyes.

(vi) Since Nelle (D or E) is next to Nivek (B, D, or E), Nelle must be D and Nivek must be E. Also, Nitsuj is B.

10. Answer: **5:00 a.m.**

Plug in the second equations' numbers into the first equation. 3 = A and 9 = B.

$(3 + 9) 3^2 - ({}^9/_C) = 105$
$(12) (9) - ({}^9/_C) = 105$
${}^9/_C = 108 - 105$
$C = 27$

The rock will explode 27 hours after 2:00 a.m., which is at 5:00 a.m.

11. Answer: **40**

Woody can paint $^1/_7$ of a spaceship in an hour, while Buzz can paint $^2/_{26}$ or $^1/_{13}$ of a spaceship in an hour. The total number of spaceships they can paint together in an hour can be found by adding the numbers together:

$^1/_7 + {}^1/_{13} = {}^{13}/_{91} + {}^7/_{91} = {}^{20}/_{91}$ spaceships in an hour

So in 182 hours, they can paint $^{20}/_{91}$ x 182 = 40 spaceships.

12. Answer: **11º**

In 120 hours (5 days), the clock loses 7*5= 35 minutes. Therefore, exactly 5 days later, the time will be 12:02 on this clock. The angle theta (Θ) can be found with the following formula, where m is minutes and h is hours past 12:00):

$\Theta = \dfrac{|11m - 60h|}{2}$

$\Theta = \dfrac{22}{2} = 11°$