Problems 13-14   Time limit: 10 minutes.

13. The sum of 62 consecutive integers is 527. Find the least of these integers.

14. Find the units' digit of the sum $17^{325} + 23^{108}$.

Problems 15-16   Time limit: 10 minutes.

15. If $7x + 62y = -2$ and $23x - 27y = 16$, find the value of $6x + 7y$.

16. If three unbiased dice are tossed, find the probability of rolling a sum of 8 or 10. Express your answer as a fraction reduced to lowest terms.

Problems 17-18   Time limit: 10 minutes.

17. If the length of a diagonal of a square is increased by 8 units, its area is increased by 144 sq units. Find the length of a side of the original square in simplest radical form.

18. In an isosceles right triangle, find the ratio of the area of the circumscribed circle to the area of its inscribed circle, in simplest radical form.

Answers:

13.   - 22

14.   8

15.   2.8

16. $\dfrac{2}{9}$

17. $7\sqrt{2}$

18. $3 + 2\sqrt{2}$