

Benchmark 1st 9 weeks Review Math 8

1. If A and B are independent events such that $P(A) = \frac{1}{5}$ and $P(B) = \frac{2}{3}$, what is the $P(A \text{ and } B)$? $\frac{1}{5} \cdot \frac{2}{3} = \frac{2}{15}$

2. There are 52 cards in a deck. What is the probability of drawing a jack or a 7? $\frac{8}{52} = \frac{2}{13}$

3. The Universal set includes numbers 0-9, inclusive. Set $B = \{1, 3, 5, 7\}$. What is B' ? $B' = \{0, 2, 4, 6, 8, 9\}$

4. Solve $\sqrt{289}$. = 17

5. Simplify $\frac{\sqrt{8}}{\sqrt{12}}$. = $\frac{2\sqrt{2}}{2\sqrt{3}} = \frac{\sqrt{2}}{\sqrt{3}} = \frac{\sqrt{6}}{3}$

6. Tom rolls two 6-sided number cubes. What is the probability that the two numbers added together will equal 6? $\frac{5}{36}$

7. What is $3^{(n-3)}$ when $n = 1$? $3^{1-3} = 3^{-2} = \frac{1}{9}$

8. Your favorite club is having an awards dinner. The caterer is offering 3 appetizers, 2 salads and 3 main course choices. If the caterers would like to offer 54 different combinations, how many dessert choices should they offer? $d = 3$ dessert choices

9. Estimate $\pm\sqrt{40}$ ≈ 6.3

10. Simplify $(3^{-2})^3 = 3^{-6} = \frac{1}{36}$

11. The lottery has 10 balls in each machine containing the numbers 0 - 9. There are 4 machines. What is the probability that each machine would produce a 4? $\frac{1}{10,000}$

12. Simplify $\sqrt{10} \cdot \sqrt{30}$ = $\sqrt{300} = \sqrt{100} \cdot \sqrt{3} = 10\sqrt{3}$

13. Sharon rolls two 6 sided number cubes. What is the probability that the two numbers added together will equal 8? $\frac{5}{36}$

14. Estimate $\pm\sqrt{610}$ ≈ 24.7

15. There are 52 cards in a deck. What is the probability of drawing a jack, replacing it and then drawing a 7?

$$\frac{4}{52} \cdot \frac{4}{52} = \frac{1}{13} \cdot \frac{1}{13} = \frac{1}{169}$$

16. If Set A = {2, 4, 6, 8, 10, 12} and Set B = {6, 10, 12, 14, 16}:

a. What is $A \cup B$? = {2, 4, 6, 8, 10, 12, 14, 16}

b. What is $A \cap B$? = {6, 10, 12}

17. If A and B are independent events such that $P(A) = .45$ and $P(B) = .5$, what is the $P(A \text{ or } B)$?

$$0.45 + 0.5 = 0.95$$

18. Simplify $-4\sqrt{7} + 2\sqrt{3} + 3\sqrt{7}$

$$= -1\sqrt{7} + 2\sqrt{3} \text{ or } -\sqrt{7} + 2\sqrt{3}$$

19. Which expression is not equal to 1?

a. $\frac{5^2}{5^{-2}} = 5^4$

b. $\frac{6^{-3}}{6^{-3}} = 1$

c. $1^{-1} = 1$

d. $240^0 = 1$

20. Mabry Middle School requires all the staff members to have a 5 character computer password that contains a letter followed by 4 numbers. Find the number of possible passwords.

$$26 \cdot 10 \cdot 10 \cdot 10 \cdot 10 = 260,000 \text{ possible}$$

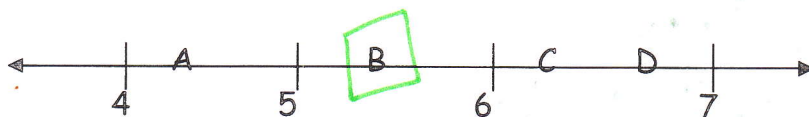
21. Simplify $2\sqrt{16} + 5\sqrt{16} - 8\sqrt{16}$

$$= 2 \cdot 4 + 5 \cdot 4 - 8 \cdot 4 = 8 + 20 - 32 = -4$$

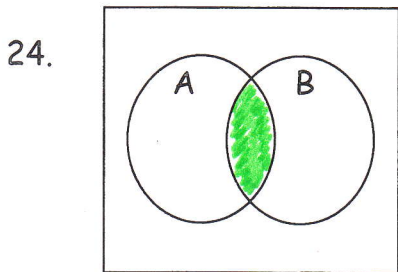
22. Simplify $\sqrt{5} \cdot \sqrt{15}$

$$= \sqrt{75} = \sqrt{25 \cdot 3} = 5\sqrt{3}$$

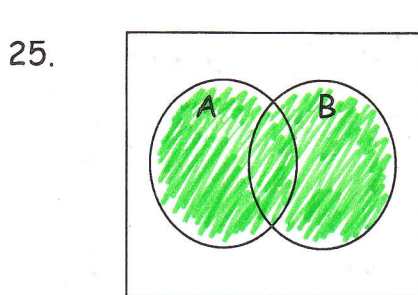
23. Which point is closest to $\sqrt{27}$?



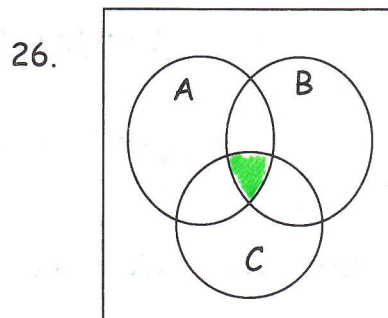
Shade to illustrate the set notation.



$$A \cap B$$



$$A \cup B$$



$$A \cap B \cap C$$