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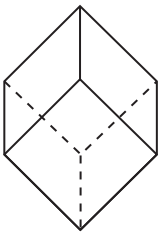
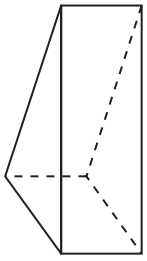
CHAPTER

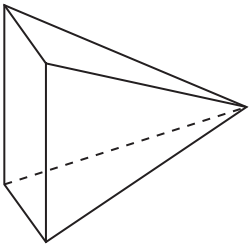
Surface Area and Volume of Solids

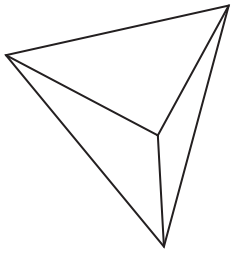
Lesson 12.1 Nets of Solids

Name each solid. In each solid, identify a base and a face that is not base.

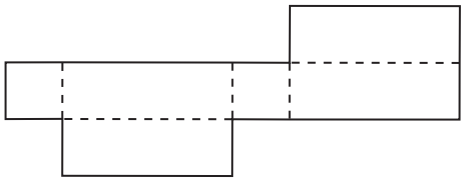
1. 

2. 

3. 

4. 

Name the solid that each net forms.

5. 

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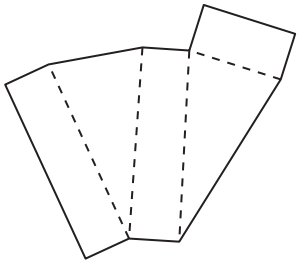
6. 

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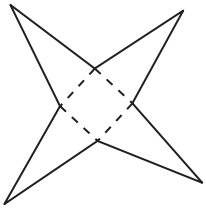
7. 

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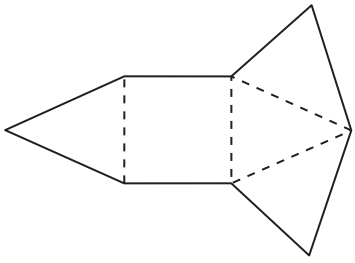
8. 

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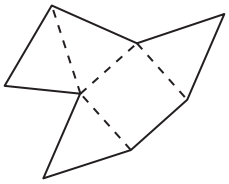
Decide if each net will form a square pyramid.

9. 

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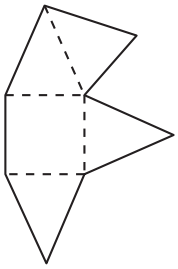
10. 

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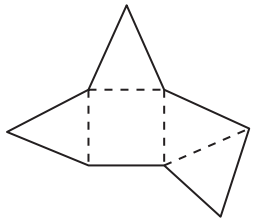
11. 

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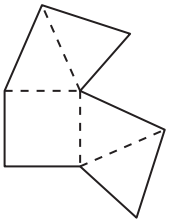
12. 

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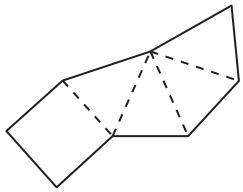
13. 

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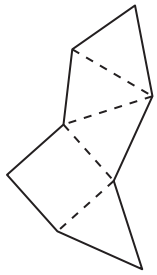
14. 

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Solve.

15. In Exercises **9** to **14**, you identified some possible nets for a prism. There are other possible nets. Find all of the other possible nets.

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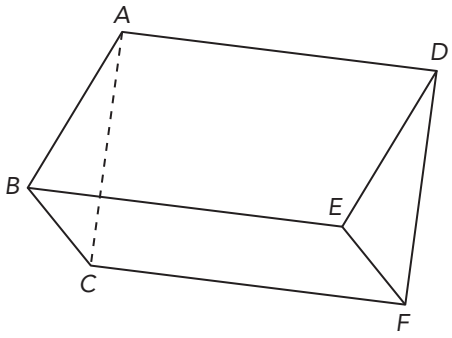
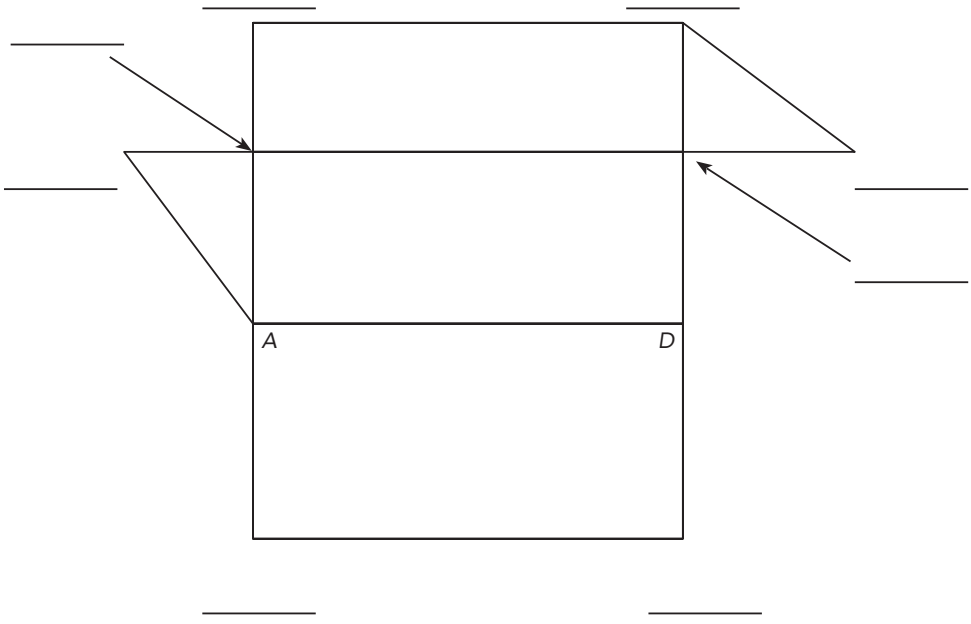
Name the vertices that are not already labeled with a letter.

16.



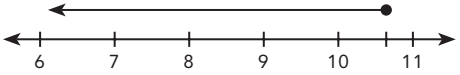


37. a) $45m \le 480$; $m \le 10\frac{2}{3}$

b) $m \le 10\frac{2}{3}$

No, 11 is not a possible value of m.

c)

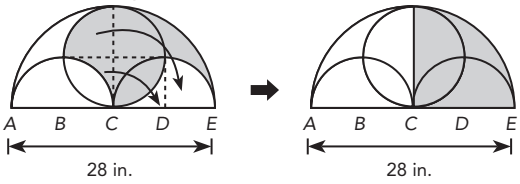


The maximum value of m is 10.

38. The area of rectangle $BCDE$ is 4 times the area of triangle ABF.
So, area of triangle ABF
$= 90 \div 5 = 18$ ft²
$\frac{1}{2} \cdot AB \cdot BF = 18$ ft²
$AB \cdot BF = 18 \cdot 2 = 36$ ft²
$AB = BF = \sqrt{36} = 6$ ft
$AC = 2 \cdot 6 = 12$ feet

39. Area of triangle RQT
$= \frac{1}{2} \cdot 21 \cdot 10 = 105$ in.²
Area of square $PQRS$
$= 21 \cdot 21 = 441$ in.²
Area of circle
$\approx \frac{22}{7} \cdot \frac{21}{2} \cdot \frac{21}{2} = 346.5$ in.²
Total area of the shaded regions
$= 105 + 441 - 346.5$
$= 199.5$ square inches

40.

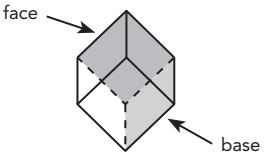


Half of the region is shaded.
The area of the shaded regions is formed by a quadrant.
$\frac{1}{4} \cdot \frac{22}{7} \cdot 14 \cdot 14$
$= 154$ square inches

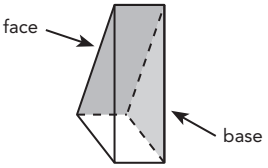
Chapter 12

Lesson 12.1

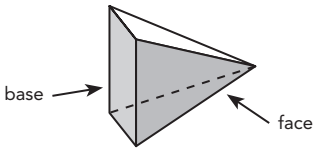
1. cube



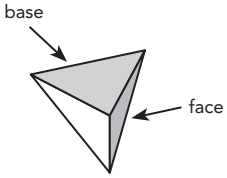
2. triangular prism



3. square pyramid

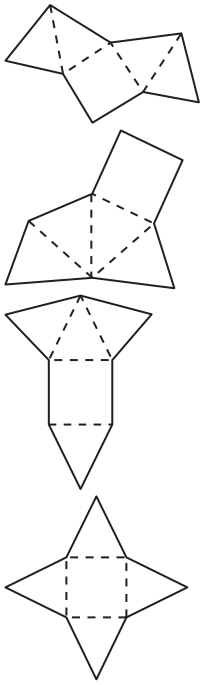


4. triangular pyramid



5. rectangular prism
6. triangular prism
7. square pyramid
8. square pyramid
9. No
10. No
11. Yes
12. No
13. Yes
14. Yes

15.



16.